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Fortnightly Review

Feeders

THERE probably isn't anyone in the air transport or aircraft manufacturing industries who doesn't favor the eventual development of feeder airlines and who doesn't consider such development as inevitable as next morning's dawn.

Yet there is more than a little apprehension within the air transport industry regarding the entire problem of feeders, especially with regard to certain applications now pending. There is a hesitancy on the part of some lines to advocate, endorse and support feeder line development and most of this apprehension and hesitancy, in our opinion, is natural.

The Civil Aeronautics Authority must soon formulate a policy with regard to feeder line development and clear the air of the present uncertain status—or lack of status—of short haul routes. Until the Authority makes known a policy there will be the unfortunate situation of primary air transport airlines battling during lengthy hearings against feeder airlines which every one realizes are going to come in the logical growth of air transportation.

At the present time it is perfectly natural that a primary operator should be concerned about the ambitions of a proposed feeder line operation in its own territory, not so much with what the feeder operator has immediately in mind, but for the future. Will a feeder operator always be satisfied with a purely local service or will he later decide to institute a few non-stop operations serving terminal points already served by primary operators?

So far as we have been able to learn, a purely feeder line operation such as All American Aviation, Inc., using the pick-up mail device, not

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Aviation to Open A New Era For Mid-West, NAA Head Says

FEBRUARY EXPORTS 204% ABOVE 1939

Monthly Value of \$20,599,703, However, Shows Decline from December and January

Exports of aeronautic products in February were valued at \$20,599,703, a 204% gain over February, 1939 but a 27% drop from the record total for December, 1939, and 19% below January, the Automotive-Aeronautics Trade Division, Dept. of Commerce, reports. January and February exports combined total \$46,080,520, or 39% of the yearly figure for 1939 and 68% of the 1938 total. Prior to 1938, exports in the first two months of 1940 are greater than any earlier annual total.

Leading purchaser of aeronautic products in February, as since the outbreak of the war, was France which included in its \$8,121,029 total, 47 aircraft for \$6,201,404 and 112 engines for \$1,279,519. France was followed by Australia with purchases of \$3,520,758; the United Kingdom, \$2,529,754; Finland, \$1,748,299 and Canada, \$1,311,991. Australia received 35 aircraft for \$3,291,575, the

(Turn to page 28, col. 4)

Pilot and Writer



Major Al Williams
Director of Gulf Oil's aviation department, whose daily syndicated aviation newspaper column is widely read.

West Wide Awake On Air Benefits, Wants Big Airport Program

A VAST upward surge in aviation throughout the nation, especially in the mid-west, is now becoming evident, according to Capt. Gill Robb Wilson, president of the National Aeronautic Association, who returned to the east early in April after his first cross-country swing as head of the NAA.

With a prediction that aviation will entirely re-make the mid-west and bring to it a new era of prosperity and influence within the next quarter of a century, Capt. Wilson said the western states are anxious for new air routes and are particularly anxious for a federal airport program.

"I've made periodic swings around the continent for many years," Capt. Wilson said, "but this last one was the thrill of a life time. The American people are awakening to the reality of aviation. The airports were humming with activity; the radio programs and editorial columns were filled with exultation over the perfect safety record of scheduled air transport. Old, hard-boiled secretaries of chambers of commerce were championing at the bit because airline extensions were being adversely recommended in Washington.

"Mayors were bragging about their airports or wailing because they had none. Airline reservations were as hard to get as a pass to heaven. Ships were full. Mothers were travelling with youngsters. The sophisticated few we used to see on the ships have given way to interested, normal, average people, eager to talk and look and learn. They were not nervous or strained. When we got out an oxygen tank to play with, they gathered around for a sniff like kids at a taffy party.

"A man with one eye could see the public had at last taken air travel to its aggregate bosom. I'll be darned if I didn't even forget to look at the 'map' myself. When a pilot rides and doesn't bother to do his own checking and vicarious flying the aviation millennium is sure here.

"And that is what happened. All through the west, especially, the realization has come at last. They want to know 'when will that national air-

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President Gives CAA Administrator More Power in Reorganization Plan

Without advance knowledge by the Civil Aeronautics Authority or to the industry, President Roosevelt on Feb. 2 transferred many functions of the Authority to the administrator and re-named that officer as the administrator of civil aeronautics with greatly increased power. The reorganization was included in the President's Reorganization Plan No. 3 and was similar to his other orders in that the agencies concerned were not consulted in advance.

By the order, which becomes effective within 60 days unless either branch of Congress votes negatively, the administrator becomes what his title implies and the Authority becomes purely a quasi-judicial body with rule-making, regulatory and adjudicating powers without administrative burdens. Origin of the order was the Bureau of the Budget.

Members of the Authority were stunned by the news of the order but after the initial reaction the comment in Washington was not wholly un-

favorable to the move and there were many who expressed belief that the agency would become much more efficient and streamlined as a result.

In a preliminary statement at his press conference President Roosevelt said: "I propose to clarify the relations of the administrator of the Civil Aeronautics Authority and the five-member board of the Civil Aeronautics Authority. The administrator is made the chief administrative officer of the Authority with respect to all functions other than those relating to economic regulation and certain other activities primarily of a rule-making and adjudicative character which are entrusted to the board. This will eliminate the confusion of responsibilities existing under the Civil Aeronautics Act and provide a more clear-cut and effective plan of organization for the agency."

The actual wording of the order entitled "Functions of the Administrator Transferred" is as follows:

(Turn to page 8, col. 4)

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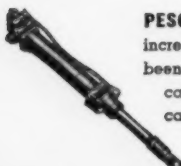
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CAA Acts to Speed Airlines' Hearings

In an effort to speed up its hearings, the CAA on Mar. 26 announced that pre-hearing conferences will be held before each proceeding on economic cases relating to airlines.

To arrange for the conferences, almost all hearings scheduled to start on or after Apr. 15 were temporarily postponed. In establishing this policy, the CAA stated that it is following an example set recently by the Supreme Court in specifying pre-trial procedure for cases before all federal courts.

"In the past the CAA has found that in a number of cases the actual inauguration of hearings has had to be postponed due to the fact that one or more parties to the action were not in fact prepared to begin hearings at the date set," the CAA said. "Recent experience with pre-hearing conferences has led the Authority to believe that such conferences would go far toward the elimination of such difficulties." Hearing dates will be assigned after the conferences if it appears that all parties are adequately prepared.

Port Study Completed by C. of C. Committee

The transportation and communication department committee of the U. S. Chamber of Commerce has completed a survey of airports and submitted recommendations to the board and as a basis for the recommendations has reported the following conditions as to the present status of airports in the U. S.:

Up to 1933, expenditures for airports amounted to \$146,000,000, private capital contributing 50% and municipalities 48%. Since 1933 an additional \$180,000,000 has been spent—77% federal, 18% municipal and less than four per cent private capital. In addition, nearly \$5,000,000 of federal funds has gone for emergency intermediate landing fields.

In its conclusions, the report indicated that experience has shown that airports cannot be self-supporting nor can their future development depend on private capital. CAA statistics are quoted showing 1937 maintenance and operations expense on all U. S. airports as over \$5,000,000, with total gross income approximately half that amount.

Goodyear Zeppelin Completing Twelfth Blimp—the 'Ranger'

The 12th blimp to be built by Goodyear Zeppelin Corp., Akron, O., will be ready within the next few weeks and will be christened the "Ranger," it was revealed recently. Immediate predecessor of the 123,000-cu. ft. blimp is the "Rainbow," which was christened last April.

New ship will be 150 ft. long, with a diameter of 41 ft., and will be capable of carrying a pilot and six passengers.

Of the 11 ships, the "Puritan," "Mayflower," "Vigilante" and "Columbia" are out of commission and the "Pilgrim," pioneer of the group, is exhibited at Smithsonian Institution in Washington. The "Defender" has been taken over by the Navy and is in operation at Lakehurst, N. J. Operating at various bases around the country are the blimps "Volunteer," "Resolute," "Reliance" and "Enterprise."

Ft. Wayne Show July 21

With an expected attendance of well over 35,000, the Fort Wayne Aero Club has decided upon July 21 as the date for its fifth annual air show. Bob Schott will again be in direct charge. The club has a membership of 185 and expects to make the annual event a mid-western air classic, especially because the National Air Races will not be held at Cleveland this year.

Calendar

- Apr. 17—National Safety Council, Aeronautical Section, Pennsylvania Hotel, New York, N. Y.
- Apr. 18—25th Anniversary, National Advisory Committee for Aeronautics.
- Apr. 25-27—Air Congress of America, Southwest Division, Tulsa, Okla.
- Apr. 28—3rd Annual Air Maneuvers, Atlanta, Ga.
- May 1-3—American Society of Mechanical Engineers, Spring Meeting, Worcester, Mass.
- May 11-12—2d Annual Aircraft Exhibit of the Aero Club of Kentucky, Bowman Field, Louisville, Ky.
- May 18—Pacific Coast Inter-Collegiate Air Meet, Gardena (Cal.) Valley Airport.
- May 27-28—NAA's National Aviation Forum, Washington, D. C.
- June 1-2—Birmingham Air Carnival, Birmingham, Ala.
- June 9—7th Annual Air Classic Sponsored by the Junior Chamber of Commerce, Port Columbus, Columbus, O.
- June 9-14—SAE's Summer Meeting, The Greenbrier, White Sulphur Springs, W. Va.
- June 9-23—3rd Annual Southwestern Soaring Contest, Wichita Falls, Tex.
- June 17-21—American Society of Mechanical Engineers, Semi-Annual Meeting, Milwaukee, Wis.
- June 25—National Inter-Collegiate Air Meet, Long Island Aviation Country Club, Hicksville, N. Y.
- July 4-6—Air Show, Denver, Colo.
- July 7—3rd Annual Air Races and Air Classic, Kalamazoo, Mich.
- July 7-9—1st National Air Congress and NAA Convention, Brown Palace Hotel, Denver, Colo.
- July 14—All-Dixie Air Show, Lovell Field, Chattanooga, Tenn.
- July 21—3th Annual Air Show, Ft. Wayne, Ind.
- Aug. 11-17—4th Annual Wisconsin NAA Air Tour.
- Aug. 18-19—Air Show Sponsored by Sheldon Chapter of NAA, Roscoe Turner Field, Sheldon, Ia.
- Sept. 3-6—American Society of Mechanical Engineers, Fall Meeting, Spokane, Wash.
- October—Air Line Pilots Association, Annual Convention, Chicago, Ill.
- Oct. 7—Air Line Mechanics Association, Annual Convention, Chicago, Ill.
- Oct. 7-11—National Safety Congress and Exposition, Stevens Hotel, Chicago, Ill.
- Jan. 1941—NASAO's Annual Convention, Louisville, Ky.

Chattanooga Air Show

The "All-Dixie Air Show" will be held in Chattanooga, Tenn., on July 14, according to announcement by Herbert S. Tate, NAA Governor for Tennessee. A feature of the show will be the selection of "Miss Dixie Aviation." Sponsors of the affair are members of the Chattanooga Flyers Club.

Fully Feathered Flight

Signalizing the approach of National Wildlife Restoration Week, 12 wild pin-tail ducks, tagged with gold-plated number bands, were shipped by TWA and EAL to Washington, D. C., from San Francisco recently and released by Secretary of the Interior Harold L. Ickes and Biological Survey Chief Ira N. Gabrielson. The birds, first migratory waterfowl known to have been flown across the continent by power other than their own, were released in Roaches Run, near Washington Airport.

This is the first time, according to the Biological Survey, that wildfowl have been removed from one flyway and released in another. The experiment is expected to give naturalists opportunity to study the migratory reaction of the wild fowl when they are liberated 3,000 miles away from their usual lanes of flight.

R. E. Doherty Replaces Gen. Kilner on NACA

Robert E. Doherty, president of the Carnegie Institute of Technology at Pittsburgh, has been appointed by President Roosevelt to membership on the National Advisory Committee for Aeronautics to replace Brig. Gen. Walter J. Kilner, retired, who has resigned because of his present identification as a consultant to an aircraft company (Curtiss Aeroplane Division of Curtiss-Wright Corp.). Gen. Kilner was appointed last December, at which time he replaced Col. Charles A. Lindbergh.

Maj. Wisehart to Washington

Maj. Harry Wisehart, commandant of the Army Air Corps reserve base at Fairfax Airport, Kansas City, Kan., has been transferred to the office of the chief of the Air Corps in Washington. Capt. John E. Bodle from Langley Field, Va., has been assigned to take command of the base at Fairfax.

Eastern Soaring Group Formed

Recently formed in New York City to encourage activity in motorless flight was the Eastern States Soaring Association which will seek to sponsor three regional contests near New York in 1940. The club also will endeavor to develop new soaring sites.

1st Army Class from Civil Schools Graduated at Kelly Field Exercises

The first class of Army Air Corps student flyers to undergo initial training at civil air schools was graduated from the Air Corps Advanced Flying School, Kelly Field, Tex., late in March.

Known as class 40-A, which began training in July 1939 at the beginning of the Air Corps expansion program, it is the largest class so far graduated from Kelly Field since its beginning during the World War in 1917.

Class consists of 220 pilots, including eight commissioned officers from other branches of the regular Army, who will be transferred to the Air Corps, and 212 flying cadets who will be commissioned as second lieutenants in the Air Corps Reserve.

Brig. Gen. Barton K. Yount, assistant chief of the Air Corps, took part in the graduation exercises. Reviewing party included Col. A. W. Robins, Col. E. A. Lohman, Col. John B. Brooks, and the heads of the nine civil air schools in which the students received elementary training: Maj. C. C. Moseley, Allan Hancock, T. Claude Ryan, Oliver L. Parks, E. J. Sias, W. G. Skelly, W. F. Long, Hal S. Darr and Walter P. Thorpe.

Following the exercises the class departed for the third Army area in the southeastern states where class members were to take part in the corps and Army maneuvers.

NACA Calls Off This Year's Langley Trip

The National Advisory Committee for Aeronautics has announced postponement for one year of the annual Aircraft Engineering Research Conference and inspection of the committee's laboratories at Langley Field. The next trip will probably be held in May, 1941. No trip was held in 1938, but the inspection went off as usual last year. Dr. Vannevar Bush, NACA chairman, said construction of new research facilities at Moffett Field in California and expansion at Langley Field, plus an increase in the number and importance of research problems now under way, made a conference this year impracticable.

Mfrs. Sanction Forum Show as Class C Exhibit

The show committee of the Aeronautical Chamber of Commerce has refused to sanction a Class A or Class B aircraft and engine show for the National Aviation Forum to be held in Washington May 27-28 under auspices of the National Aeronautic Association. Instead, the committee agreed to sanction a Class C show for the occasion which means that local aircraft dealers and distributors and any manufacturers in the vicinity of Washington may put on an exhibit.

Thomas H. Beck, general chairman of the forum, had hoped for a large-scale aircraft display, but the manufacturers decided that two World's Fairs this year, other exhibits already arranged for, and general pressure of production on foreign and domestic orders, made another show unfeasible and economically impossible.

Testing Supercharger

A Consolidated naval patrol plane has been kept at Vought-Sikorsky Aircraft Div. of United Aircraft Corp. at Stratford, Conn., since last summer as the subject of exhaustive tests with a new type of supercharger developed at the General Electric laboratories in Bridgeport, Conn.

New Braniff Directors



As reported in the last issue, Robert J. Smith, shown at left, and Hal C. Thurman, shown at right, were elected directors of Braniff Airways March 21. Mr. Smith has been vice-president in



charge of operations since March 15, 1938. Mr. Thurman is general counsel of the airline and is senior partner of Thurman & Thurman, prominent Oklahoma City legal firm.

Airlines Chalk Up Unparalleled Safety Record of 1 Perfect Year

The President, Messrs. Hinckley, Hester and Hardin, All Congratulate Operators; Col. Gorrell and Jennings Randolph Hail 'Unprecedented Accomplishment'

Scheduled air transport in the U. S. established a record of safety unparalleled in the annals of all forms of transportation when, at 2:45 a. m. on Mar. 26, it completed one full year of operations without a fatality of any kind. The event was widely hailed throughout the government and the industry and was featured by a letter of congratulations from President Roosevelt to Robert H. Hinckley, chairman of the Civil Aeronautics Authority.

The President's letter was read by Hinckley over a national CBS network on the evening of Mar. 26. It follows:

"The news that our domestic airlines will on Mar. 26 complete an entire year of flying without a single fatal accident is indeed gratifying. Will you please extend my heartfelt congratulations to every last employee of the airlines—be he field boy, pilot or president—and to your own personnel in the Civil Aeronautics Authority.

"I am deeply impressed by reports submitted to me showing that during the year now closing our domestic airlines have flown 87,325,145 revenue plane miles, carried 2,030,000 passengers, flown 814,906,250 passenger miles, a truly remarkable aggregate. Looking behind this record, in which we can all take such pardonable pride, we find it has been achieved through cooperation and team work between the personnel of the air transport lines and workers in the federal government. I trust that this co-operation may continue with like satisfactory results through the years ahead."

Hinckley in his address said in part: "I can imagine no task which I could discharge with greater good will than to extend these congratulations to the personnel of the airlines. And I can add the most heartfelt congratulations of the entire Civil Aeronautics Authority."

Col. Edgar S. Gorrell, president of the Air Transport Association of America, made the following statement in part:

"This perfect safety record is unprecedented in any transportation system and was achieved during a period when the airlines were operating more schedules, carrying more passengers, mail and express at greater speeds than in any previous 12-month period. . . . On the basis of the number of passengers carried and average mileage per passenger—402 miles—the figures are equivalent to flying the entire combined population of the states of Arizona, Idaho, Nevada, Vermont, Wyoming and New Mexico, from Washington to Detroit. An outstanding contribution has been that of the Civil Aeronautics Authority and its sound policies laid

down under the Civil Aeronautics Act by Congress in June of 1933."

In the House of Representatives on Mar. 26 Representatives Jennings Randolph of West Virginia and Clarence Cannon of Missouri, both staunch friends of aviation, gave one-minute talks in praise of the safety record.

Calling the record "astounding," Cannon said in part:

"The railroads, heretofore the safest method of transportation, have had wrecks and fatalities. On the highways truck, bus and automobile have killed and injured thousands. Even our usually placid water-borne traffic reports heavy loss of life. But in the air, the safest, the fastest, the most convenient, the most efficient method of transportation, we have not had a single fatal accident."

Randolph said:

"There are many factors which bring about this splendid record. The airlines themselves have done a real job with improved equipment, efficient and devoted personnel, and with safety. The enactment of the Civil Aeronautics Authority law, which brings about proper regulation and a greater degree of safety for the commercial airlines of the U. S. has been of real help in establishing this truly noteworthy achievement."

By teletypewriter over 30,000 miles of circuits operated by the CAA was dispatched at 4 a. m. a NOTAM (message to airmen) congratulating all airlines, CAA and Weather Bureau personnel, upon the safety record. The notice was signed by Hinckley, by Clinton M. Hester, administrator, and by Tom O. Hardin, chairman of the Air Safety Board.

Col. Charles A. Lindbergh, in a letter addressed to Hinckley, said he regarded this "as one of the most significant advances ever made in commercial aviation" and said: "Our hopes have become facts with amazing rapidity and in many instances the facts have already outdistanced our vision."

Other statements were made by Donald W. Douglas, president of Douglas Aircraft Co.; C. Bedell Monroe, president of Pennsylvania

American Eagle



Among the many newspaper cartoons depicting the new safety record established by U. S. Airlines was this one by Reg Manning which appeared in the "Arizona Republic," Phoenix, Ariz., and which was distributed through the Phoenix Republic and Gazette Syndicate. Aviation is a favorite subject with Manning.

Central Airlines, and W. A. Patterson, president of United Air Lines.

On Apr. 8 the National Safety Council gave a dinner at the Mayflower Hotel in Washington for the presentation of a special commemorative safety award to "All Airlines of the United States" in recognition of the outstanding record. The calendar year 1939, the council said, was the safest year in the history of air travel, with more than 83,000,000 passenger miles flown per passenger fatality, or 1.2 passenger deaths per 100,000,000 passenger miles. Government and airline officials attended the dinner.

EAL Re-Elects Directors

At the annual meeting of stockholders of Eastern Air Lines, Inc., at Wilmington, Del., March 26, the following directors were re-elected: T. F. Armstrong, Paul H. Brattain, Paul M. Davis, Adolf Gami, W. Barclay Harding, George B. Howell, Hugh Knowlton, Wiley L. Moore, Stuyvesant Peabody, John H. Phipps, E. V. Rickenbacker, Laurence S. Rockefeller, Edward Romfh, Sidney L. Shannon and Harold S. Vanderbilt.

A Teletype Flash Over 30,000 Miles



At 3:50 a. m. on March 26 when the airlines completed one year's perfect safety record a congratulatory notice to airmen was transmitted over the 30,000 miles of teletype and to 300 planes in the air. At right, Clinton M. Hester, CAA Administrator, hands the message to E. E. Newman, operator in charge at Washington Airport. Charles I. Stanton, extreme left, director of the Bureau of Federal Airways, and Major R. W. Schroeder, center, vice-president of United Air Lines and chairman of the operations committee for the Air Transport Association, look on.

Pick-up Service May Be Suspended by P O Pending CAA Decision

Unless there is a CAA decision granting All American Aviation Inc., certificates of convenience and necessity on AM1001 and 1002 by May 14, it is probable that the Post Office Dept. will be forced to suspend the company's pick-up and delivery operations until CAA action is taken.

All American's experimental contract with the P O expires May 14 and, although the situation is still indefinite, it is now believed that the only way in which service could be continued would be to re-advertise the routes.

Only other alternative would be for Congress to pass a resolution continuing the service until certificates are issued, but this is thought to be improbable. CAA Examiner Robert J. Bartoo, who heard the case, has not yet issued a proposed report.

Aviation

(Continued from page 1)

port program get started? "Why doesn't the CAA training take in boys who cannot go to college?" "How can we help get our airport improved?" And wonders of wonders, one tax assessor informed me he wasn't going to appraise the little ships at the local field because he thought they were helping keep the airport going and that was a real public service. Can you beat it?

"The Northwest Aviation Conference was the best in many years. Joe Crosson was grinning from ear to ear. Pan Am is going into Alaska operations about May 1. That is Joe's dream. The Seattle airport—Boeing Field—was busy as 42nd St. and Broadway. Northwest and United have the town completely sold. No section of the country is more air-minded than the northwest. It is a private flyers' paradise.

"Down at Sacramento they can't talk about anything but the new Army air base. Across the hump to Reno we had a load of folks going to get married. Over at Denver the chamber of commerce had a luncheon to hear Capt. Stevens tell of stratosphere flying. Must have been three or four hundred and some couldn't get in. All going to town on the subject of aviation.

"At Denver they are making big plans for the NAA convention in July. The governor is having a party and the mayor is staging a buffalo barbecue and there will be a day in the Rocky Mountain National Park. It's your own fault if you miss it.

"The long and short of it is that the Flying Forties are here with a bang. Aviation will give the mid-west a pre-eminent voice in national affairs within a quarter of a century. To us in the east flying is a convenience, and the same is true of the west coast. But to the mid-west aviation is the dawn of a new era of influence, prosperity, opportunity, freedom. Watch Denver and Salt Lake and Kansas City and the Oklahoma and Texas cities take the bit in their teeth. Just as industry went south to cotton, so capital is going west to the nation's bread basket."

Capt. Wilson will make another regional swing the latter half of this month when he visits mid-western cities and speaks at the Southwest Aviation Conference at Tulsa, Okla., Apr. 25-27.

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CANADIAN COLONIAL DOUGLAS OVER U. S. ARMY MILITARY ACADEMY AT WEST POINT

HENDRICK HUDSON SKYWAY with WRIGHT CYCLONES

High above the valley of the historic Hudson River, Canadian Colonial airliners today follow the course once sailed by Hendrick Hudson's *Half Moon* in futile search for a northwest passage to the Orient. This modern Skyway over the ancient river valley, where Rip Van Winkle, it is said, once heard the rumbling bowling-balls of Hudson's ghostly crew, now echoes to the roar of Wright Cyclones in Canadian Colonial Douglasses.

From New York to Montreal, Canadian Colonial passes over much historic and scenic country—the beautiful Hudson winding its way through Bear Mountain Pass . . . the U. S. Army Military Academy at West Point . . . New York's Playground—Saratoga Springs and the Adirondack area . . . Fort Ticonderoga and points in the Lake Champlain region made famous by Ethan Allen and his Green Mountain Boys—and across the border into Canada to link the important cities of two great nations. A fleet of new Wright Cyclone-powered Douglas DC-3's provides the same fast, luxurious accommodations which have made this engine-airplane combination the choice of major airlines all over the world.

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WRIGHT Aircraft ENGINES

Marine Terminal Opened

A crowd estimated at more than 50,000 persons attended the dedication on Mar. 31 of New York City's flying boat base at LaGuardia Field and witnessed the departure of Pan American Airways' Yankee Clipper for Lisbon, Portugal, via Port Washington, L. I. The clipper is shown at the marine terminal of LaGuardia Field just before its take off. (International News Photo).



PCA Into New York?

Although no official word has been received by the CAA, it is understood that Pennsylvania-Central Airlines intends to file an amendment to its Baltimore-Atlantic City, Atlantic City-Camden application to include service into New York.

TWA Adds 4th Round Trip

A fourth transcontinental round trip service was inaugurated by TWA on Apr. 1, adding 200,000 plane miles a month to the system, V. P. Conroy, vice-president-traffic and sales, has announced. New schedule is known as the Thunderbird. Westbound plane leaves New York at 8 pm., and east-bound plane leaves Los Angeles at 3 pm.



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LG's Marine Terminal Dedicated as 50,000 Watch Clipper Depart

The marine terminal of LaGuardia Field at New York City, built at a cost estimated at \$7,500,000, was dedicated on Mar. 31 at which time the Yankee Clipper of Pan American Airways inaugurated twice-weekly flights to Europe from the base.

Radio and field announcers reported to the audience of 50,000 at the terminal and to the radio audience that the huge flying boat had departed from the base for Lisbon, Portugal, but the Clipper went first to Port Washington, L. I., for fuel inasmuch as it left LaGuardia Field with only 80 gallons. Fueling facilities at the new terminal were not complete at the time of the dedication.

Mayor F. H. LaGuardia turned over to Juan Trippe, Pan Am president, the first hangar built at the marine base. Present at the ceremony were representatives of airlines which are interested in operating trans-Atlantic lines to New York City. They are American Export Airlines, British Overseas Airways Ltd., KLM (Royal Dutch Air Lines), Ala Littoria of Italy and a Scandinavian aviation syndicate.

A message from President Roosevelt was read by John McKenzie, commissioner of docks, and addresses were given by Mayor LaGuardia; Dr. Joao de Bianchi, minister of Portugal to the U. S.; Sen. Robert F. Wagner of New York; Trippe; Charles P. Graddick, superintendent of air mail, Post Office Dept.; Thomas Burke, chief of the State Dept.'s international communications division, and Lt. Col. Brehon B. Somervell, WPA administrator in New York.

KLM to Use DC-3 on South Atlantic Trials

A. A. Boon Hartsinck, the KLM-Royal Dutch Airlines assistant representative in the U. S., has stated that his company will begin experimental flights from Portugal via the Cape Verde Islands to Paramaribo, Surinam, South America, in a Douglas DC-3 revamped transport late in April or early in May. Rebuilt for long over-water operation, the DC-3 will have fuel tanks in the cabin and will have a range of 3300 miles for the longest sea hop of 2200 miles. Only mail will be carried. There will be a crew of five on board. The company hopes to connect the South Atlantic route with Amsterdam by non-stop flights to Lisbon. In South America the route will connect with KLM's West Indies services.

EAL Begins Operations From LaGuardia Field

Eastern Air Lines on Apr. 1 celebrated the beginning of its operations from New York Municipal Airport, LaGuardia Field, as Mayor Fiorello La Guardia christened the Silversleeper "The Mexico Flyer," the first EAL plane to be dispatched from the field.

Capt. E. V. Rickenbacker, EAL president and general manager, was dinner host to John McKenzie, commissioner of docks; Maj. Elmer Haslett, New York's aviation consultant; Sir Hubert Wilkins, famous explorer, and Mr. and Mrs. Elmer A. Sperry Jr. before the flight was dispatched.

Sir Hubert and Sperry were passengers aboard Eastern Air Transport's maiden flight with passengers from old North Beach airport on Aug. 18, 1930. Capt. Erlon H. "Pete" Parker, one of EAL's "Million Milers," piloted the flight, said to be the first from North Beach, site of the present LaGuardia Field. Capt. Parker also was at the controls of "The Mexico Flyer" on Apr. 1.

Officials, Press Ride in Pan Am's Boeing 'Clipper Flying Cloud'

First official passenger flight of Pan American Airways' Boeing 307 four-engined "Clipper Flying Cloud" was made in Washington Apr. 4 when 30 persons, including representatives of Congress, Army, Navy, CAA and Air Safety Board were taken aloft for an hour's flight.

Later in the day, representatives of the press also rode in the 33-passenger supercharged plane, which will shortly be placed in service in South America.

On the press flight, the plane climbed to over 11,000 ft., but the supercharging maintained atmospheric pressure equivalent to 8,000 ft. in the cabin. Passengers were impressed with the ship's interior fittings, the ceilings and walls being lined with a fabric of Jacquard loom design. All flights were made from the Army's Bolling Field.

In addition to CAA and Air Safety Board members, passengers on the first trip included Gen. George Marshall, Army chief of staff; Rear Adm. John Towers, chief of the Navy's Bureau of Aeronautics; R. Walton Moore, counselor of the State Dept., and Edward J. Noble, assistant secretary of commerce. Juan Trippe, president of Pan Am, was host. William Van Dusen, PAA's director of public relations, handled the press flight.

Weathers Is LG Inspector

John F. Weathers, formerly a chief petty officer and airplane pilot in the Navy, has been named an airport inspector at LaGuardia Field, New York City, and has been placed in charge of the marine terminal, John McKenzie, commissioner of docks, has announced. Weathers resigned from the Navy to accept the position but remains in the fleet reserve.

Traffic Manager



Nelson Fry has been made general traffic manager of United Air Lines with headquarters in Chicago.

NY-Washington Airway World's Busiest After AA, EAL Add Flights

The New York-Washington airway early this month became the world's most heavily traveled when American Airlines and Eastern Air Lines, the two operators of the route, each added two round trips daily, making a total of 35 rounds trips daily.

Eastern's new schedules, inaugurated on Apr. 2, also marked beginning of EAL service from LaGuardia Field, New York City, in addition to service from Newark Airport. In full page newspapers ads, the line declared that "out of both airports together Eastern Air Lines maintains service every hour on the hour, the most frequent service between any two cities by any airline in the world."

American on Apr. 1 increased its NY-Washington service by adding two round trips, it was announced by Herbert D. Ford, Washington district sales manager. New flights to New York leave Washington at 3:45 pm. and 10 pm. The 3:45 flight will furnish a fourth through service to Boston. Ford said the addition of these flights will give American a total of 12 flights to New York, and makes the third time this year that Washington-NY schedules have been added by AA.

Eastern's promotional material states that in 11 years the line has carried more than 800,000 passengers between NY and Washington "in perfect safety and comfort."

C-W's Transport Gets Tests from Eddie Allen

With Edmund T. Allen, director of aerodynamics and flight research for Boeing Aircraft Co., at the controls, the Curtiss-Wright 36-passenger subsonic plane made its first test flight at St. Louis late in March. Manufactured by the St. Louis Airplane Div. of Curtiss-Wright Corp., the 19-ton craft left the airport runway after a 600-ft. run. Takeoff required only 11 seconds, it was reported.

Allen stopped in St. Louis to make the preliminary test flight while en route to the Boeing plant at Seattle, Wash., from Brownsville, Tex., where he delivered the first Boeing Stratoliner built for Pan American Airways. He was expected in Seattle in time to fly south with the second Stratoliner (model 307) for Pan Am.

Allen made ground tests of the C-W transport several weeks ago through arrangements made with Boeing.

The twin-engined craft manufactured at St. Louis is powered by two 14-cylinder double-row Wright Cyclones of 1,700 hp. each.

Mayor Ellenstein Asks Lines to Decide Fate of Newark Port

Mayor Meyer C. Ellenstein of Newark, N. J., on Mar. 29 informed the major airlines using Newark Airport that unless they could provide a revenue to the city of \$135,000 for the use of the field for the current year, the port would be closed "of necessity." The figure is approximately what was paid by the lines last year, but since LaGuardia Field was opened in New York City daily airline flights into and out of the Newark field have dropped to 110 from 160.

It was understood that the airlines would answer Mayor Ellenstein by Apr. 15 as to what they wanted to do concerning the airport.

Now ... Stainless Manifolds for NEW TORPEDO BOMBERS

*Hot exhaust gases "tamed"
by stainless construction*

ALWAYS alert to any technological advancement that will improve its aircraft, the U. S. Navy recently placed in service this squadron of torpedo bombers, all equipped with stainless engine exhaust manifolds.

Stainless was the natural choice for these ships' engine exhaust manifold systems, since it possesses all the properties necessary for safe handling and disposal of the hot, corrosive exhaust gases.

At prolonged operating temperatures from 1000 to 1600°F., it has high ultimate strength.

It stubbornly resists corrosion resulting from exposure to atmosphere and to products of modern "doped" fuels.

It minimizes oxidation scale through the entire temperature range.

It effectively resists surface abrasion at points of metal-to-metal contact.

It offers excellent fabrication qualities, such as deep drawing, bending and welding.

These are the principal reasons why leading aeronautical engineers have adopted U. S. S. Stainless Steel as the standard material for exhaust manifolds and collector rings. This construction, using the stabilized material which is not subject to intergranular corrosion, has proved itself in actual service records of 7000 and more hours. Today, it is serving successfully as standard equipment on most of America's famous airplanes, both in civil transport and in Army and Navy fighting craft. Write today for engineering details.



SQUADRON OF Douglas Torpedo Bombers in formation flight. These new ships all include stainless steel exhaust manifolds, built up from half sections deep-drawn to shape in a drop hammer and assembled by welding. Official photograph U. S. Navy.



STAINLESS STEEL

AMERICAN STEEL & WIRE COMPANY, Cleveland, Chicago and New York
CARNEGIE-ILLINOIS STEEL CORPORATION, Pittsburgh and Chicago
NATIONAL TUBE COMPANY, Pittsburgh

Columbia Steel Company, San Francisco, Pacific Coast Distributors

United States Steel Export Company, New York

Scully Steel Products Company, Chicago, Warehouse Distributors

UNITED STATES STEEL

American Asks Two New Lines, Involving 1,013 Route-Miles

Applications for two new routes which would add 1,013 miles to its system were filed with the CAA on Mar. 30 by American Airlines. The company is also seeking to have Windsor, Ont., and Niagara Falls, N. Y., included as intermediate points on AM7, New York-Chicago.

Routes sought by American are Cincinnati-Philadelphia, a distance of 513 miles, and Cincinnati to Scranton and Wilkes-Barre via Pittsburgh, 500 miles. Scranton and Wilkes-Barre would be served from one airport.

In its Cincinnati-Philadelphia application, American states that during the first and second years of operation it will schedule three round trips daily, or 1,123,470 airplane-miles per year. Four round trips, or 1,497,960 miles, will be operated during the third year, and five trips, or 1,872,450 miles, will be flown in the fourth and fifth years.

Without making any provision for mail pay, American expects the following results from operations during the first five years: a \$21,401 loss, and profits of \$48,821, \$86,726, \$95,082 and \$185,647, respectively. The company intends to operate the route with DC-3 aircraft, engaging in day and night visual contact, instrument and over-the-top flights.

On the Cincinnati-Pittsburgh-Scranton-Wilkes-Barre route, during the first two years, American proposes to operate three round trips, or 573,780 scheduled miles, between Cincinnati and Pittsburgh, and one trip, or 173,740 miles, from Pittsburgh to Scranton and Wilkes-Barre. In the next three years, four trips, or 765,040 miles, will be operated Cincinnati-Pittsburgh, and two trips, or 347,480 miles, Pittsburgh-Scranton-Wilkes-Barre.

Without provision for mail pay, the following results from operations are expected during the first five years: loss of \$44,482, and profits of \$12,175, \$15,672, \$73,960 and \$107,731, respectively.

In its application for Windsor and Niagara Falls stops on AM7, American points out that its present flights now operate near Windsor and either over or near Niagara Falls. The Canadian government and the city of Windsor are constructing a new airport and "petitioner is informed and believes and, therefore, states on information and belief that said airport will be adequate for the operation of Douglas DC-3-G-2 and DC-3-G-102 aircraft," the application said.

American now owns 43 Douglas DC-3's and has 18 on order, according to the applications.

North American's Advanced Trainer



As reported in the last issue, the North American AT-6 advanced trainer shown above has been delivered to Wright Field for the Army Air Corps. It is an improved model of the BC-1A basic combat plane. (Air Corps Photo.)

One C. C. Darling Directorate Approved, Another Denied in CAA Decision

Upholding the proposed report of its examiner, the CAA on Mar. 28 approved C. Coburn Darling as a director of Canadian Colonial Airways, Inc., and Roosevelt Field, Inc., but not as a director of the airline and The Aviation Corp. Approval of all three positions had been sought.

"We consider it our duty under the statute to look at each particular case in light of the showing made by the applicants," the CAA said. "We find that here... the applicants have not sustained the burden placed upon them by the statute of showing that the public interest will not be adversely affected by the proposed interlocking relationship between Canadian Colonial Airways, Inc., and The Aviation Corp. The record before us does not deal adequately with various intercorporate relationships which the record suggests, and which the applicants would have to clarify before we could determine that their statutory burden had been met."

The Aviation Corp.'s interest in the companies in which it has stockholdings has not, with the exception of Aviation Manufacturing Corp. and Roosevelt

Field, Inc., been defined, the CAA said. "The applicants have not apprised us as to what voice, if any, The Aviation Corp. has in the affairs of American Airlines, or whether the former's creditor position carries with it any control, actual or potential, over the policies of the latter," it added. "Nor have they informed us to the extent to which the stockholders of the two companies are identical... Again the applicants have failed to clarify sufficiently the relationship, if any, which exists between American Airlines and Canadian Colonial Airways, Inc., directly or through the activities of individuals who may have interests in both of them."

"No useful purpose would be served by a further exposition of the doubts which the record itself raises but does not resolve. Regardless of whether the Authority is permitted to search outside the record, it clearly is not required to do so... We find, accordingly, that the burden has not been sustained."

Regarding Darling as a director of both Canadian Colonial and Roosevelt Field, the CAA stated that it was similar to the case in which William Barclay Harding was approved in positions with Eastern Air Lines and Roosevelt Field. "Since we see no reason to doubt our conclusion in that case, the application herein is granted..." the decision said.

Reorganization

(Continued from page 1)

"The functions vested in the CAA by the Civilian Pilot Training Act of 1939; the functions of aircraft registration and of safety regulation described in Titles 5 and 6 of the Civil Aeronautics Act of 1938, except the functions of prescribing safety standards, rules, and regulations and of suspending and revoking certificates after hearing; the function provided for by Section 1101 of the Civil Aeronautics Act of 1938; and the functions of appointing such officers and employees and of authorizing such expenditures and travel as may be necessary for the performance of all functions vested in the administrator; are transferred from the Civil Aeronautics Authority to and shall be exercised by the administrator, who shall hereafter be known as the administrator of civil aeronautics."

From one angle the order merely puts in so many words what has been the general practice of the Authority. More and more the five members have turned over routine administrative matters to Clinton M. Hester, the Administrator, and under the new arrangement the five members will concern themselves exclusively with economic regulation and rule-making. This should result in speeding up economic regulation cases now before the body. On the other hand, by not having to take all administrative details to the five members for approval, the administrator will have the power to act quickly without being burdened by red tape.

Relationships between the authority and Hester are not expected to be impaired by the order. Since Robert H. Hinckley became chairman, the members and administrator have worked harmoniously with a minimum of any kind of friction. Although the members were considerably upset when the order became known, fearing that they were being stripped of most of their powers, the secondary reaction was not unfavorable.

Under the Act, the five members are appointed by the President and are removable only for good and specified cause. The administrator, however, is appointed by and removable by the President directly at the latter's pleasure. Under the order, all of civil aviation is placed directly under the President.

Reaction on the Hill was not clearly defined. Sen. Pat McCarran of Nevada, co-author of the Act, was not prepared to make a statement until after the President's Order No. 4, expected Apr. 9, became known. There were some indications that the order would meet with opposition in the Senate but it was too early to say how much or how effective this opposition would be.

There was agreement on one point, however: the order is quite sweeping and makes a sharp distinction between economic regulation and quasi-judicial functions and purely administrative functions. Titles 5 and 6 of the Act include registration of aircraft and recordation of aircraft ownership; and all safety regulation. These matters have been under the supervision of the administrator in the past, but after the order becomes effective the Authority will be relieved of any responsibility in their connection. All promotional responsibilities will come under the administrator, although nominally he has had charge of these in the past. The Civilian Pilot Training Program, initiated and sponsored by Hinckley, will be under Hester although actually it has been there all along.

KLM Orders Fokkers

Four 24-passenger "F-24" planes have been ordered by the Royal Dutch Air Lines (KLM) from the Fokker Airplane Company of Amsterdam for delivery late in 1941, it has become known. The planes will be all-metal, high wing units with tricycle landing gear and designed to cruise at 205 mph. For some years the Fokker company has stressed military production, although the company has been anxious to get back into transport production and has been dickering with KLM for some time. The order is interesting to the U. S. industry in view of KLM's large purchases of transports and engines here in the past.

St. Louis-Amarillo, Winslow-San Diego-LA Lines Sought by TWA

TWA has indicated its intention of filing with the CAA an amendment to its New York-Los Angeles route to furnish additional service out of St. Louis through Oklahoma City west, and from Winslow through San Diego into Los Angeles.

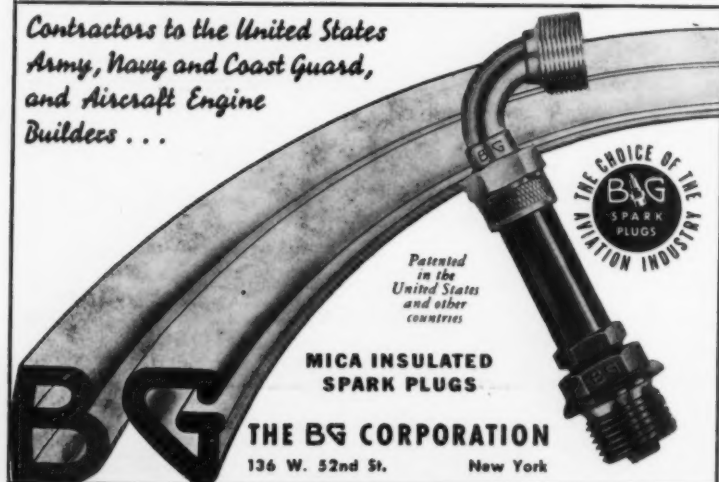
At St. Louis, now a stop on TWA's transcontinental, a line would run through Joplin, Tulsa and Oklahoma City, connecting with the main route again at Amarillo. At Winslow, a line would branch off through Phoenix and San Diego into Los Angeles. Between St. Louis and Oklahoma City, TWA would parallel American Airlines' AM30. American has also asked a route from Oklahoma City to San Diego.

The St. Louis-Amarillo link would add 746 miles to TWA's system, while the western link would add 575 miles. "The route forms an important link in rounding out our transcontinental system, bringing several areas not heretofore served by any direct connection to the east into our cross-country network," said Jack Frye, president of TWA.

Fire Destroys 8 Planes

Eight airplanes were destroyed and one man critically injured by fire in a hangar at Patco Airport, near Norristown, Pa., Mar. 14. Start of the fire is attributed to the explosion of a compressed air tank operated by James R. DeLong. DeLong, who was repairing a plane, was seriously burned.

Contractors to the United States
Army, Navy and Coast Guard,
and Aircraft Engine
Builders...





The Birdmen's Perch

Below are listed the balance of the solvers of the December problem. That is, all who sent in their solutions before the deadline we had to set in self-defense. In order to bar having to print a special Honor Roll next November for that one very welcome letter that always comes in eight months after publication from a fan in Johore, Pago Pago, or Tanganyika.

"Tattered Wing-Tips," Editor, The Birdmen's Perch, Room 3800, Gulf Bldg., Pittsburgh, Pa.

REPEAT PERFORMANCE

On February 15th the National Safety Council handed out its Certificates of Special Commendation for 1939.

Right up there, leading the parade in safety achievements, were three old friends of ours who will be hanging up this year's certificates next to the ones they won last year and in years previous.

The friends:

American Airlines, Inc.

Eastern Air Lines, Inc.

Pennsylvania-Central Airlines Corp.

All three are good Gulf customers. Eastern Air and Penn-Central use only Gulf Aviation Gas and Gulfpride's commercial twin, Gulf Airline Oil. American buys G.A.G. in certain territories.

We're proud to do business with such consistent topnotchers.



WHAT PRICE FRICTION?

The other day we read where 500 tons of weight, floated on oil, can be moved by only 1/650,000 of a horsepower. As to how many thousand horsepower would be required, if there were no oil, we shudder to guess.

But the fact is that without oil no plane would get off the ground. And without *good oil* no motor would keep running for more than a few minutes. For the strain put on oil by modern engines with their high-compression ratios and higher temperatures is such that inferior oils burn up . . . go to carbon and sludge in no time.

That's why we recommend Gulfpride Oil . . . the *only* oil refined both by conventional methods and by the famous Gulf-invented Alchlor process. It's this extra, unique process that digs out up to 20% more carbon and sludge formers . . . makes Gulfpride the world's finest oil for planes.

HONOR ROLL

Matthew Verknyl; Sam Yankelowitz; Fred G. Taintor; Hugh V. Williams; Eugene Edminster; Jimmy Creaser; Alfred Portinga; Howard J. Strauck; Bill Keienburg, Jr.; Fred Knowles; Fred Kelly, Jr.; Bob Stotts; Fred McMaster; P. D. Andrews; Sidney Bobo; Harry E. Chambers; Bob Newill; John F. Suydam. Congrats to all!

OLD-ENOUGH-TO-KNOW-BETTER DEPT.

The combined ages of a pilot and his plane are 35 years.

When the pilot was twice as old as the plane is now, he was twice as old as the plane was then.

How old is the pilot and how old is the plane?

(Mail in your answer today to T.W.T. We'll shoot back the official by return mail.)

THIS MONTH'S WHOPPER!

Dear T.W.T.:

Here is my contribution to This Month's Whopper. If it's true, then I'm a liar.

After barnstorming all last Summer, I checked my profits—or else—and decided to tie her to a fence to slowly rot away. Make more money that way.



Naturally when anyone retires they raise chickens or Hell. I took chickens (having done my Hell raisin' previously) and, to soothe my nasty disposition, a rattlesnake by name of Buzzie for a pet.

Now Buzzie was in the habit of slipping into the hen house to get himself an egg. Inside, one day, he ran onto an old doorknob. "Nice egg," says Buzzie. "Nice eating." So down it went.

When about halfway out through his favorite knothole in the door, he spied the other doorknob which had fallen off on that side.

"Well, guess I can stand one more," says Buzzie.

Now then we got something to think about. Buzzie with a knothole around his middle and him around a doorknob on each side the knothole. "Buzzie," says I, "this is going to take headwork. Digest 'em—long time. Break 'em—nope. Hurt Buzzie."

Two days Buzzie was in despair (also in the knothole); then it struck.



"Buzzie," says I, "your venom ain't got oomph." So I tore for the house, got a medicine dropper, filled it with a few drops of Gulf Aviation Gas out of my tank and shot it down Buzzie's throat.

Whang! Out the door he came—knothole and all. He coiled three times and took off East.

Noise! You shoulda heard his rattles. Their roar run half of Europe into their bomb shelters when he passed over.

O. A. Moritz

P. S.—Buzzie came gliding in just now. Says, "Make mine sparrow eggs. And Gulf Aviation Gas! Takin' no more chances."

Gulf Oil Corporation and Gulf Refining Company . . . makers of



GULF AVIATION PRODUCTS

Braniff Applies for KC-Washington Line

A new service between Kansas City and Washington, as an extension of its Chicago-Dallas route, is to be sought by Braniff Airways in an application to the CAA, according to recent announcement by Tom Braniff, president of the company.

Stops on the 976-mile route would include Jefferson City, Mo., St. Louis and Louisville. DC-3 equipment would be used on all flights, Braniff said. Two daily round trip Kansas City-Washington express flights via St. Louis and Louisville would be operated, plus two local daily flights between Kansas City and St. Louis via Jefferson City.

Eastern Air Lines and Missouri Central have filed applications with the CAA for a St. Louis-Washington route via Evansville and Louisville. Kansas City-St. Louis is now served by TWA, without a stop at Jefferson City.

The proposed route would offer a through airline service between San Antonio, Houston, Austin, Ft. Worth, Dallas, Oklahoma City, Wichita, Kansas City, and Jefferson City, St. Louis, Louisville and Washington, Braniff said.

Excaliburs for S. America?

Lockheed Aircraft Corp. may receive an order for two four-engined Excaliburs from South African Airways in addition to the 16 Lodestars recently ordered, according to British and South African air journals. *The Fly Paper* of Johannesburg says in its February issue: "Under existing circumstances, we are genuinely pleased that American aircraft were selected for service in the Union and beyond . . . We are glad they decided on Lockheeds . . ."



NOW "THE SOONER"

Braniff's Third Flight Southwest

● Named for the famous pioneers who beat "The Run" of 1889 to lay first claim to Oklahoma's waiting wealth—Braniff's third luxury flight serves the modern business traveler who would get there sooner and get the business in the Southwest's 5-billion-dollar empire market!

● The Sooner leaves Chicago at 10:10 A. M., supplementing The Texanair, departing at 1:20 P. M., and The Starlight Express, leaving at 9 P. M. Thus, Braniff alone offers morning, noon and night service between the Great Lakes and the Gulf with three equally convenient schedules returning.

IT PAYS TO **FLY** SOUTHWEST
BRANIFF AIRWAYS

CAA Investigation of Air Travel Card Plan, Discounts, Continues

Still in session as this issue went to press were hearings before CAA Examiner F. A. Law Jr., on the CAA investigation into the air travel card plan, government travel discount provisions, and other special discounts. Proceedings opened Mar. 18.

All carriers except TWA have presented testimony in favor of continuing the air travel cards. TWA, on the other hand, has taken a definite position that in its present form the plan, from an economic standpoint, is adverse to the public interest. The company favors a general rate study, and adds that if, for want of a better plan, the travel cards are continued, they should be handled through a central agency, eliminating competitive features.

Also opposing the plan at the hearing are representatives of the travel agents, who do not receive a discount on scrip tickets.

Long and detailed testimony by airline officials has urged continuation of the plan on the following grounds: the plan enables the airline salesman to reach top executives, which executives in turn endorse air travel when they subscribe; the airline salesman is given something definite to sell; the 15% discount is justified for bulk transportation and has stimulated travel, especially of a commercial nature. Elimination of the plan would be very harmful, it was said.

Typical of testimony given was that of Charles Rheinstrom, American Airlines' vice-president-sales, who also called the plan "an effective advertising medium." If the CAA ordered the plan abandoned, "we know of no plan . . . that would, in our opinion, be a satisfactory substitute," he said.

Rheinstrom also stated that the plan "is a tool with which we are able to, more successfully than any other means yet discovered, overcome obstacles to the sale of air transportation." He gave these obstacles as fear of injury, death, high altitudes or air sickness, expense, uncertainty of weather, family objections, improved rail transportation, insurance restrictions, habit of using other forms of transportation, distance to airports, baggage restrictions, and the necessity for making definite reservations.

Discussing travel agents, he said that if the plan were abandoned, many agents would get the business now traveling on cards. "We would be dumping into the hands of a third party control of a large part of our business," he said, adding that in many cases the airlines would be paying a commission "on a selling job not done."

Other side of the picture was given by William H. White, president of Thomas Cook & Son, Wagons Lits Inc., who told Examiner Law that introduction of scrip had cut into his agency's air travel business materially. Air passengers booked by Thomas Cook & Son from 1933 through 1938 were 2,200, 2,600, 5,881, 5,400, 4,200, and 3,200, respectively, he said.

Prior to the travel plan in 1936, Thomas Cook & Son maintained a special aviation staff, issued time-tables, advertised and performed other functions to encourage air transportation. White said, adding that these have now been discontinued. Agents will be satisfied if they get back the customers which the airlines took away from them through the scrip plan, he explained. His salesmen are now instructed not to sell air travel amounting to more than \$425, but to refer such cases to the airlines where a 15% discount can be procured through the plan, he added. In Europe, his company receives a 10% commission on all air travel sold, White said.

A four-day recess in the hearing, from Mar. 22 to 26, requested by Howard Westwood, attorney for the Air Transport Association, did not change the course of the proceedings. Westwood, representing all airlines except TWA, stated that their position was "diametrically opposed" to that of TWA.

Witnesses presented by Westwood have included Rheinstrom, Ray Ireland, United Air Lines' general traffic manager; Don Rogers, UAL's auditor of revenues; D. D. Walker, Chicago & Southern's vice-president-general sales manager; Leigh Parker, general traffic manager of Delta; Charles Beard, vice-president-sales of Braniff; J. J. O'Donovan, vice-president-sales of Pennsylvania-Central; M. D. Miller, American's manager of passenger sales; Paul Bewshea, U. S. representative of Imperial Airways, who explained European travel plans; M. F. Redfern, executive secretary of the Air Traffic Conference of America, and G. Lloyd Wilson, professor of transportation and public utilities, University of Pennsylvania, who testified concerning special fares on railroads, bus and steamship lines.

One exhibit introduced by Westwood showed that the proportion of total passenger revenue derived from air travel card plan holders was 35.6% in 1937, 42.5% in 1938, and 44.3% in 1939. Figures for 12 companies in 1939 were: American, 47.68%; Boston-Maine, 23.5%; Canadian Colonial, 27.22%; Chicago & Southern, 45.77%; Continental, 34.60%; Delta, 41.69%; Eastern, 46.47%; Inland, 20.21%; Mid-Continent, 35.30%; Penn-Central, 29.19%; United, 41.65%, and Western Air Express, 27.60%.

UAL's Proposed San Francisco-LA

Boeing Fares Protested by TWA

Protest by TWA that the proposed special United Air Lines' San Francisco-Los Angeles fares, good only in Boeing 247-D equipment, may lead to the general introduction of equipment rates in air transportation was received by the CAA on Mar. 28.

United proposed to inaugurate, effective Apr. 10, special fare of \$13.90 one way, or \$25 round trip between the two west coast cities, good in 247-D's making local stops. The rate would be 26.64% below present Douglas fares. On Apr. 6, United filed an answer to TWA's protest, but as this issue went to press no action had been taken by the CAA.

"The public interest requires that before the tariff revision proposed by United Air Lines is permitted to become effective a thorough study and investigation of the economic problems involved in the introduction of equipment rates in air transportation be conducted by the Authority and that general principles governing adoption of such rates be officially formulated so as to insure establishment of uniform and equitable fares, rates and charges," TWA stated. The company asked that a hearing be held.

Rates between San Francisco and various other points on the TWA system are affected by the proposed tariff revision, TWA explained, pointing out that UAL does not propose similar reductions in Boeing fares elsewhere on its system.

Answering the protest, UAL stated that the extent to which its tariff revision will lead to use of equipment rates by other airlines "will depend to a considerable extent upon whether the experience gained by United in using such equipment rates between San Francisco and Los Angeles proves that increases in load factors produce sufficient revenue to overcome reduction in fares; and that even if such equipment rates of

CAA Seeks Canadian Depositions in Sale of Marquette Stock

The CAA recently appointed a commissioner and authorized him to take depositions of John Paterson and Gordon Small, officers of the Cornhill Co., Ltd., and the Bluejacket Co., Ltd., of Canada, in connection with stock sales of Marquette Airlines.

As revealed in the recent hearing on Marquette's citizenship, Peter Beatty, British subject, who owned various Marquette shares, made his transactions through the above companies in Canada. The CAA, it is believed, wishes to check dates, etc., of such transactions to determine if Beatty's stock was purchased by John McKelvy, Marquette backer, before the "grandfather" period in 1938.

Appointed as commissioner by the CAA is any one of the following: Homer M. Byington, Consul General of the U. S. in Montreal; Richard Ford, U. S. Consul, or Lloyd Yates, U. S. Consul.

Although a commissioner has been appointed, no depositions can be taken without the consent of the Canadians. Testimony at the recent hearing indicated that the Canadians are not likely to comply with such a request.

Veteran Jumper Retires

Master Sergeant Ralph W. Bottrill, Army Air Corps noncommissioned officer who has been jumping with parachutes during the major portion of his active service in the Army, retired from the service at Kelly Field, Tex., on Mar. 31. One of the pioneers in the field of parachute development, Master Sergeant Bottrill on July 1, 1933 was awarded the Distinguished Flying Cross after becoming the first of Army personnel to jump with a manually operated, free type parachute.

United . . . result in a substantial increase in revenues and profits, similar equipment rates are not likely to be adopted by other air carriers, except in cases where two or more kinds of equipment are used by an air carrier in operating multiple schedules between two points."

The reduced fare is not only based upon equipment, but also takes into consideration difference in Boeing and Douglas flying time, difference in meals served, and other factors, UAL said. The San Francisco-Los Angeles load factor on Boeings is 3.51 passengers, while on the Douglases it is 13.73, it added. The 26.64% reduction "resulted from a desire to utilize the advertising appeal of a round trip fare of \$25 between San Francisco and Los Angeles," UAL stated.

Hunt Succeeds Lewis as Douglas Comptroller

Appointment of Ralph V. Hunt as comptroller of Douglas Aircraft Co. Inc., Santa Monica, Cal., effective immediately, to succeed William H. Lewis who resigned on Feb. 26, was announced late in March by Donald W. Douglas, president. Hunt will have charge of the company's accounting and allied activities.

Prior to accepting the new post Hunt was assistant manager of the Los Angeles office of Ernst & Ernst whose organization he served for 13 years. In 1918 he went overseas as a second lieutenant pilot with the Army Air Corps. Hunt took his Army training at the University of Illinois and later at Chanute Field.

CHICAGO & SOUTHERN GOES DOUGLAS!



CHICAGO
SPRINGFIELD
ST. LOUIS
MEMPHIS
JACKSON
NEW ORLEANS

Introducing a brand new luxury fleet of Douglas DC-3 21-passenger transports May 1, Chicago & Southern Air Lines improves a service already famed for efficiency enhanced by friendliness.

Flying the direct "Valley Level Route" between Chicago and New Orleans, C&S offers winged access to every important city of the Mid-West and South in the comfort, security and luxury that only Douglas Airplanes afford.

So goes the news of an expanding air transport industry with major units steadily adding Douglas equipment. Douglas Aircraft Co., Inc., Santa Monica, Calif.

FLY DOUGLAS  **THE WORLD OVER**
IT PAYS TO



Pan American Seeks New Night Service LA to Mexico City

Direct air service supplementing that now operated by Cia Mexicana de Aviacion between Los Angeles and Mexico City was sought by Pan American Airways Inc. in hearing before CAA Examiner Frank McIntyre, Mar. 21-26. Proposed by the applicant is thrice weekly flights leaving Los Angeles on Tuesday, Thursday and Saturday with intermediate stops at Hermosillo, Mazatlan and Guadalajara.

American Airlines though intervening in the proceeding did not oppose the projected Los Angeles-Mexico City operation, C. R. Smith, American president, explaining that the company appearance was to include in the record a brief description of American's intended service from Dallas-Ft. Worth and El Paso through Eagle Pass and Monterrey to Mexico City. The CAA, he suggested, while considering the present PAA application should be familiar with proposed as well as present airlines operations in the area. Application by American for the Mexico City route, it was indicated, will be filed shortly.

Declaring that the principal obligation of the Mexican company, which now operates Douglas DC-2 equipment three times weekly between Los Angeles and Mexico City, is to give local rather than through service, George L. Rihl, PAA senior vice-president, testified that Cia Mexicana lacks the equipment to meet the growing public need and further is not in condition financially to acquire such equipment. Cia Mexicana is a subsidiary of the Pan American system operating Mexican registered planes flown by Mexican pilots.

The applicant, he said, plans night operation with two Douglas DC-3 aircraft and will carry only international traffic, the intermediate stops designated being primarily for refueling purposes. The proposed schedule provides for departure from Los Angeles at 11 pm. and arrival in Mexico City at 12:25 pm. the following day. With connecting schedules at Mexico City one-day service would be offered between Los Angeles and Guatemala, two-day service between Los Angeles and the Canal Zone.

Henry J. Friendly, PAA counsel, in his opening statement, pointed out that although Los Angeles and Mexico City are only 1,600 miles apart, present rail time between them is more than four days.

Frank Willy, traffic superintendent of Cia Mexicana, stated that the new service would not injure the Mexican company's operation since Cia Mexicana cannot provide for all of the local traffic available and is now operating under a 78% load factor. Estimate was offered by Willy that for every two passengers accommodated by Cia Mexicana between Los Angeles and Mexico

Navy's Air Giant Outdoes Army

Reports that the U. S. Navy has under construction an 84-ton flying boat which will be the world's largest airplane, either military or commercial, were made by the *Washington Star* on Mar. 31. Under construction for nearly a year at Glenn L. Martin Co., Baltimore, Md., the craft is expected to be capable of flying non-stop from California to Japan and return. Few facts or figures were contained in the report and no comment could be obtained from the Navy. News of the flying boat followed closely the War Dept. announcement on Mar. 22 of the huge B-19 four-engined bomber being built by Douglas Aircraft Co. Inc., Santa Monica, Cal. (AMERICAN AVIATION, Apr. 1).

Wingspread of the Navy's giant was reported to be 230 ft., compared to 210 ft. for the Army plane. Additional specifications follow with figures for the Army B-19 in parentheses: Gross weight, 84 tons (70 tons); useful load, 32 tons (28 tons); horsepower, 9,000 (6,000); cruising speed, 200 mph. (200 mph.); range, 12,000 mi. (6,000 mi.); crew, 15 (10).

The Navy is expected to take delivery on the ship from Martin about the time the War Dept. receives the B-19 from Douglas "in the near future."

City one person is turned away for lack of space and that for every person transported between points within Mexico another one is similarly refused service.

The applicant's operation, Col. J. Clawson Roop, PAA vice-president and treasurer, predicted will divert about 10% from the international traffic now carried by the Mexican company, a loss which he indicated would easily be replaced by local passengers now being denied service.

Other company witnesses were Hugo C. Leuteritz, PAA chief communications engineer, and Charles A. Miller, assistant general traffic manager. Leonard K. Schwartz, of the Los Angeles County Chamber of Commerce, urged that the applicant's proposed operation be certified, while A. H. Gilbert, E. Dillon Smith and Walter Peck from the CAA, and Charles P. Graddick, air mail superintendent of the Post Office, testified briefly concerning various statistical exhibits.

CLEGG MOVED UP

Becomes Executive Vice President of Thompson Products, Inc.

Lee M. Clegg, senior vice-president of Thompson Products, Inc., Cleveland, O., has been elected executive vice-president, it has been announced by Fred C. Crawford, president.

Mr. Clegg started with the company in 1919 as a stock chaser in the factory after graduating from Case School of Applied Science with a B.S. degree. He became junior salesman in the equipment division in 1922 and promoted to sales manager in 1924. In 1928, at the age of 31, he was elected a vice-president, and was named to the board of directors in 1935.



Clegg

MCA WITHDRAWS

Kansas City-Denver Route Not Needed, Company Tells CAA

Mid-Continent Airlines recently withdrew its application for a route between Denver and Kansas City, telling the CAA that adequate service between the two points can be furnished by connecting schedules.

In withdrawing the application, John S. Wynne, MCA's attorney, stated in a letter to the CAA: "Since filing this application and as a result of an investigation by the officers of this company, it has been decided that the proposed new service is not warranted in the public convenience and necessity and that the present air facilities existing between Denver and Omaha on United Air Lines and the present service of Mid-Continent Airlines between Omaha and Kansas City are sufficient to meet the needs of the public if better connections can be arranged at Omaha with United Air Lines, and it is the purpose of this company to seek the cooperation of the CAA and the Post Office Department in order to effect suitable and better connections. The very small amount of time saved by a direct air service from Denver to Kansas City over the connecting service at Omaha would not, in our opinion, justify any large outlay of government funds, such as proposed by other carrier applicants."

The Kansas City-Denver route is being sought by United (as part of Des Moines-Denver-Kansas City), Continental Air Lines and Braniff. Hearing will be held soon by the CAA.

CAL's New Lodestars

Will Cruise at 275 mph.

Continental Air Lines soon will operate three new Lockheed Lodestars which, because they will be equipped with Pratt & Whitney 1,250-hp. twin-row "C" engines, will be considerably faster than any passenger transport now in use, cruising at "about 275 mph." Engines will be fitted with Bendix fuel injectors and will operate at 46% of power.

Ordered from Lockheed Aircraft Corp., Burbank, Cal., the three 14-passenger transports will cost a total of \$334,000. Delivery is expected in June and July.

Continental early this year purchased the first Lodestar manufactured by Lockheed which will be delivered by May 11 when the line begins operation on its new Roswell-Hobbs-Carlsbad route, an extension of AM29, Denver-El Paso.

CAL now operates three Lockheed 12-A's, two Lockheed 14-H's and one Stearman aircraft.

Establishes Own Office

The midwest division of Canadian Airways Ltd. on Apr. 1 established its own office in the St. Regis Hotel, Winnipeg, Man.

NAL Opens Extension; NWA, CAL to Open New Routes Soon

Daytona Beach-Jacksonville flights, as part of the service on AM31, Daytona Beach-Tampa-Miami, were inaugurated by National Airlines on Apr. 3, following a recent CAA decision granting the company the long-sought extension.

National is operating two trips daily into Jacksonville, connecting its routes 31 and 39. It is receiving the same mail pay on the extension as on AM31.

Concerning other new routes, the Post Office Dept. states that from the standpoint of equipment and facilities, Northwest Airlines probably will be prepared to inaugurate service over AM45, Twin Cities to Duluth-Superior, sometime in May. NWA has not yet requested a mail rate for the line, but the PO will let the operation start without pay and make the rate retroactive.

Continental Air Lines, which recently was granted a route through Roswell, Hobbs and Carlsbad, N. M., as part of AM29, Denver-El Paso, has tentatively set May 11 as the date for commencement of service.

CAA Refers Puerto Rican Line to Atty. Gen. for Violations

The CAA on Mar. 22 referred to the Attorney General for action the case of Aerovias Nacionales, Inc., San Juan, Puerto Rico, for operating a plane without an airworthiness certificate.

The company on Feb. 20 filed application with the CAA for routes between San Juan-Ponce, San Juan-Mayaguez, and San Juan-Vieques Island-St. Thomas-St. Croix-St. Thomas-San Juan.

Between Jan. 1 and Jan. 13 of this year, Aerovias Nacionales operated aircraft NC18569 "on numerous occasions in scheduled air carrier operation transporting mail, passengers, and freight within Puerto Rico... and between Puerto Rico and adjacent island possessions of the United States, when at no time during this period was there in effect an airworthiness certificate for said aircraft," the CAA said.

The company is subject to a civil penalty of not to exceed \$1,000 for each violation.

Inter-Island Shows \$13,555 Loss for 1939

Loss of \$13,555.58 for Inter-Island Airways Ltd. in 1939 is indicated from a compilation by AMERICAN AVIATION of monthly reports filed by the carrier with the Civil Aeronautics Authority.

The over-water airline that for more than a decade has operated among the Hawaiian Islands last year carried 21,861 revenue passengers for \$358,538.46, or 85.2% of the \$420,776.30 total operating revenue received. Mail pay of \$44,591.25 represented 10.6% of the company's total revenue, while \$14,124.55 or 3.4% was derived from express and freight. Average revenue percentages for the U. S. domestic air transport industry in 1939 were passenger 63%, mail 33%, express and freight 4%.

Passenger load factor for Inter-Island during 1939 was 56.75%, approximately the same as the transport industry's average. The company operates Sikorsky S-38 and S-43 amphibians.

Total operating expense was \$451,308.48, and net income before income taxes a \$23,896.49 deficit. Various traffic figures for the year include revenue passenger miles flown 3,147,676; mail pound miles 4,479,599; express-freight pound miles 16,240,850; available seat miles operated 5,547,051, and revenue plane miles 410,931.

* AIRCRAFT HULL • AIRCRAFT LIABILITY • PERSONAL ACCIDENT • EMPLOYERS LIABILITY • HANGAR KEEPERS LIABILITY *

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incurred by owners or operators
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* AIRCRAFT LIABILITY • AIRPORT LIABILITY • AIRPORT PROPERTY DAMAGE *

New Washington Airport to Have First Automatic Airway Traffic Control Board; Like Stock Quotation Device

THE Civil Aeronautics Authority has contracted with the Teleregister Corp. for the installation of the first automatic system for electrically posting flight data in connection with the control of air traffic. This system will center around the airway traffic control station to be located in the new administration building at Gravelly Point, and will tie in with other control points in the Washington area, including Bolling Field and Anacostia.

The Teleregister Corp., an affiliate of the Western Union Telegraph Co., was formed in 1928. Robert Daine, its president and founder, was born in France. He is an engineer graduate of the Paris and Lille Universities and was for four years an officer in the French Air Force during the World War. Wounded at Verdun in 1916, he is Knight of the Legion of Honor and has received, besides the Croix de Guerre with several citations for bravery, many decorations from most of the allied armies for his service in bombardment, photography and other aerial activities.

Teleregister systems have been in use for more than 10 years, principally in the stock quotation field where classified information must be telegraphically transmitted and posted in tabulated form directly on display boards, accurately and rapidly. In 1929, when Teleregister developed and placed in operation its first automatic quotation service, stock trading was at a peak and brokerage houses found it difficult to keep pace with the market by black-board price postings from the ticker tape.

When high speed tickers were installed, the posting of quotations by hand was often far behind and the speed at which the boys were required to work during active markets provoked errors, further limiting the value of already tardy quotations. The Teleregister system provided a system for board posting which was entirely automatic for displaying stock prices practically simultaneously with the stock ticker record, with no board boys obstructing the view.

The system to be installed at the Gravelly Point Airport will accomplish for the CAA automatic posting of flight data directly from the source of information with the same advantages of speed, accuracy and legibility that characterize the Teleregister stock quotation system and, in addition, will perform many additional and valuable functions peculiar to airway traffic control.

These additional functions include: Automatic recording of all transmitted and posted data, with time automatically inserted into the record every minute; automatic re-transmission and posting of local traffic data in the airport control tower; semi-automatic re-arrangement or "sequencing" of flight data as the flights progress to maintain the desired order of fix data postings corresponding to the position of the several aircrafts on the airways or their intended landing sequence; semi-automatic calculation of A.T.C. estimates of arrival times over successive markers from base departures and flying time; also, various automatic checking and attention signals.

A primary objective in laying out the installation has been to maintain the prompt classification and display of essential flight control information with a minimum of effort on the part of the operating personnel, leaving them free to perform their principal supervisory duties, particularly during periods of

heavy traffic or under emergency conditions.

The Washington flight control system will provide a degree of flexibility and provision for future expansion unusual in automatic installations of this character. The construction of the main flight progress board will not be unlike the Teleregister stock quotation boards installed in the New York Stock Exchange, the Toronto Stock Exchange; also, in many brokers' offices throughout the U. S. where Teleregister service is supplied over Western Union lines. The data are to be posted by digit indicators of the revolving drum type, arranged in panels as required to make up the columns of data items.

The initial installation will consist of four panels; each for 50 flight fix postings and 32 indicators per posting in horizontal rows. The 50 fix postings or horizontal positions in each panel are grouped under manually interchangeable marker strips so that the number of flight data to be posted under any one marker or fix designator can be changed at will.

The panels will be approximately three feet wide and five feet high with the lowest posting 27 inches from the floor. The layout of the panels will be along the circumference of a 30-foot diameter circle with the operating positions toward the center, for economical spacing with provision for future expansion.

The horizontal rows of indicators for fix postings will be sub-divided vertically into flight data items by thin slate gray lines; 11 items, such as expected approach time, actual altitude, etc., making up one complete fix posting. The digit indicator characters will be chrome yellow, one-half inch by one-quarter inch, set off by a background panel color of midnight blue. Marker and data designation strips will carry reddish orange letter abbreviations on the same blue background.

The board postings will be under control of two local keysets of the adding machine type in front of the board. Certain data items may also be posted from keysets at remote transmitting points and under certain circumstances data from the CAA communication system will be classified and posted automatically on the board.

The local keysets will include rows of keys for direct horizontal position selection (1-50) for data item selection (1-11) for the data posting (1-6 digits) in addition to special function keys. As keys are depressed a small lamp within the key will glow through the translucent plastic key top and the lights will remain until the posting operation is complete, as an aid to correct keyset operation.

Keysets at remote transmitting points will be combined with a teleprinter to provide a check record of all transmissions, both at the transmitting point and at the A.T.C. central, in addition to the automatic board posting. Transmission of the flight identification and the marker abbreviation from remote keysets will automatically select the correct horizontal position on the board. The remote keysets with the office monitor may be used for inter-office teleprinter communication by preceding the message with proper "board disconnect" signals.

All board postings from remote keysets will automatically set up an indicator in the "attention signal" column. Both the A.T.C. calculator and

Founder



Robert Daine, president and founder of the Teleregister Corp., whose device may revolutionize airway traffic control.

supervisor will be required to check the horizontal position for information or new data when the "attention signal" is displayed.

Means will be provided to prevent interferences between local and remote keysets. Each keyset is automatically connected to the board for posting operations only after the complete data have been set up on the keys to avoid idle board equipment time.

As flights progress from the area or are completed to destination, the corresponding flight data are "wiped-out," or removed from the board. Ordinarily the flight first to arrive at, or over, a marker is posted in the lowest horizontal position under the fix designator. With the automatic board, when this bottom position is wiped out, all postings in higher numbered positions under the same marker will automatically progress downward one row.

Similar sequencing operations under the control of the local keysets will allow automatically moving all flight postings under one marker up or down any desired number of positions or interchanging the horizontal position of any two flight postings. In this latter case, all intervening postings are automatically rearranged to maintain their correct sequence. In case the posting space under any marker becomes crowded, additional horizontal positions may be provided by manually moving the marker designation strips, and resetting the marker assignment switches.

The auxiliary board to be installed in the control tower at the airport will provide space for 20 fix postings. By this means, all flight data pertaining to the Washington National Airport will be duplicated in the tower, simultaneously with the display on the main flight progress board. For convenience the tower board will be located in a small panel along the back of a desk in the center of the tower, easily within view of tower operators but not obstructing their horizon line of sight.

The entire system, which is an adaptation of existing Teleregister systems must be, as they are, accurate. This means the equipment must be easily maintained. Most of the operating equipment not described is made up of standard automatic switching telephone equipment and has been used by Teleregister with excellent results for many years.

Existing stock exchange systems have

Standley and Kilner to Pan Am's Board

At a regular meeting held in the New York offices of Pan American Airways System on Apr. 2, Adm. William H. Standley and Gen. W. G. "Mike" Kilner were elected to fill existing vacancies on the board of directors.

After holding all intervening ranks in the Navy, Adm. Standley was chief of naval operations. He represented the U. S. government in the London Naval Conference in 1935-36. Upon retiring from active service in 1938, he reverted to the rank of rear admiral. By special act of Congress, however, he was elevated to the rank of full admiral.

Gen. Kilner recently retired as assistant chief of the Army Air Corps, served in the far east, Europe and Latin America and also formerly served as chief of staff of the GHQ Air Force.

Commenting on the election of the new directors, Juan T. Trippe, Pan Am president, stated that "while Adm. Standley and Gen. Kilner do not represent special stockholder interests, their wide experience in aviation and international affairs will be of great value to Pan American in meeting aggressive future competition of large foreign flag air systems in the international field."

Trippe also stated that their counsel would likewise be of great assistance in better discharging the growing responsibilities of the line in connection with national defense.

Brewster Elects Brown

Brewster Aeronautical Corp. stockholders have elected Dayton T. Brown, vice president and general manager, a director, filling a vacancy of about a year. Frank S. Hubbard has been promoted from assistant treasurer to vice president.

King Joins Boeing School

Ellis F. King has joined Boeing School of Aeronautics, Oakland, Cal., as instructor in electricity and radio. He was graduated from the University of Cincinnati in 1936, and in 1937 he accepted a fellowship at the university, spending two years teaching and studying for his M.S. degree, which he secured in 1939.

adapted themselves readily to routine maintenance as there has been a period after market hours when they are out of service. However, this CAA installation must operate 24 hours each day; therefore, all important equipment will be jack-mounted which will permit maintenance on a regular basis and keep the equipment trouble free.

The D.C. power required for the automatic equipment will be supplied by rectifiers from the main A.C. airport power supply with manually operated cut-over switches to duplicate fall-back units.

The Gravelly Point Airport installation will be completed in October and has aroused a great deal of interest. It is believed this development will mark another progressive step taken by the airway traffic control section and will greatly aid in accomplishing its functions with efficiency.

Furthermore, to meet an increasing need for faster and more efficient means of getting complete flight traffic information to the airline operators, it may be definitely stated that auxiliary boards, displaying all or any part of the flight information shown on the CAA flight progress board can be made available on a rental basis to any airline company desiring such service. With this auxiliary service the operating staff and dispatchers may at all times have before them at the airline offices complete data on all current flights on routes in which they are interested.

Along the Lines

St. Patrick's Day Ride—Vice President Jerry O'Donovan of Pennsylvania-Central Airlines staged a novel stunt on March 17. He loaded a DC-3 with prominent Irishmen from Washington and served a luncheon of corn beef and cabbage aloft. Among those on board were Mrs. Robert Brennan, wife of the Irish Free State Minister; Ambrose O'Connell, Second Assistant Postmaster General; Oswald Ryan, CAA member; Vincent Burke, Washington postmaster, and John Stuart and Tom Early of the CAA.

Braniff Survey Flight—A group of civic leaders from ten Texas cities was flown in a Braniff Airways DC-3 from Dallas to Denver for a survey flight to the Colorado city March 22. The company has filed for a new route to Denver. On the flight were Tom E. Braniff, president; Robert J. Smith, vice president; John Sullivan, operations dept.; Capt. R. C. Shrader, First Officer Charles Spencer and Stewardess Virginia Meyer.

United's Overhaul Job—From half way around the world, from New Guinea in the East Indies, came propellers recently for overhauling at United Air Lines' base at Cheyenne. The props belong to the Bulolo Gold Dredging Corp.'s fleet of trimotored planes which fly between the almost inaccessible jungles of New Guinea and Adelaide, Australia. W. P. Hoare, UAL supt. at the repair base, said a contract has been signed for regular overhauling despite the long distance from the other side of the world.

American's Master Control—In order to be able to know at a glance where American Airlines' planes are at any given time, G. K. Griffin, assistant to Ralph Damon, vice president-operations, has constructed a device for routing the flagships over the airways. It is made of pyralin. At the top it resembles a system map of America. Down the sides are lettered the hours of the day. Strings, denoting airplanes, are fastened at the top at those points where planes are based. Red strings indicate DC-3's, blue strings indicate sleepers, and green the DC-2's. The various strings trace the ships' movements. The device serves as a master control of planes in planning schedules and is being installed at the New York maintenance headquarters. It replaces charts.

United's Survey Flight—Twenty Boston and Hartford business men were flown to Chicago recently for a dinner given by the Chicago Association of Commerce in connection with United's application for a route into Boston. The Mainliner was piloted by Capt. J. O. Johnson.

Robb on Eastern Tour

Alex L. Robb, development engineer for Interstate Aircraft & Engineering Corp., El Segundo, Cal., is on an extended trip through the east conferring with heads of aircraft manufacturing companies.

Aircraft Accessories Corp. Expands



Among the aircraft accessory and equipment companies to show exceptional growth during the past two years is Aircraft Accessories Corporation, of Glendale, Calif., which has just announced the purchase and immediate occupancy of a fully equipped plant within a block of its present general offices and laboratories. Shown above are Ted Lynn, president, on left, and Edward Burke, vice president and sales manager, on right. With a backlog of \$404,926 on April 1, Airaco is now manufacturing a complete line of hydraulic equipment at the Glendale plant (\$312,926 backlog) and radio transmitting and receiving equipment, etc. (\$92,000 backlog) at the Kansas City plant of Siebenthaler division, wholly owned subsidiary purchased last year. The company is endeavoring to develop markets for both military and commercial plane equipment and is planning to expand its experimental work in the new Glendale factory.

Airline Employees Buy Planes—That's News

Two groups of airline employees in New York City are proving that scheduled air transportation need not be entirely on the other side of the fence from private flying.

Five employees of American Airlines have banded together to buy a Luscombe powered with a 65 hp. engine and fly the ship from Roosevelt Field when off duty. The men are R. J. Quale, Howard Johnson, Bill Reynolds, Alden Young and A. A. Anderson.

About the same time a group of United Air Lines employees decided to engage in lightplane flying and purchased a Piper Cub. They formed a flying club with Mel Hackman as president and Herman Boyer as secretary-treasurer. Seven members of United's ground staff are members plus an aeronautical manufacturing company engineer and two maintenance workers from another airline. Besides Hackman and Boyer the members are Art Fallon, Charles Guthrie, Don Greenwald, Jim Donovan, George Baldwin and Jack Cusker, all of United; and Bud Emmons and Bart Myrick.

Gulf Employees Honored

Ten thousand veteran employees who have completed 10 years or more of service with the Gulf companies are being congratulated by Col. Frank Drake, president, who on behalf of W. L. Mellon, chairman, and the board of directors of Gulf Oil Corp., is presenting service awards at district gatherings currently being held in various sections of the U. S.

AA Ad Wins Award

American Airlines received an award for the best piece of advertising copy for 1939 at a meeting late in March of the Chicago Federated Advertising Club. The copy, entitled "Here I am—the fellow who said he would never fly," was written by Larry Triggs of Ruthrauff & Ryan who received special acknowledgment.

\$25,000 Settlement Awarded

Denver, Colo.—Mrs. Belle Delano Bate of Denver has been awarded a \$25,000 settlement in her suit against Braniff Airways for the death of her husband, Raymond T. Bate, a Denver contractor. Bate, with seven others, was killed in a Braniff plane in a crash at Oklahoma City on Mar. 26, 1939.

South Carolina Adds Restrictions to New Pilots on New Ships

The South Carolina Aeronautics Commission issued new pilot regulations effective Apr. 1 materially tightening state regulations permitting the carrying of passengers by limited-commercial and private pilots according to announcement by Dexter C. Martin, director. The new regulation reads:

"Pilots, with less than 200 hours certified time, shall not fly an aircraft, other than the model or type used in taking their primary instruction, until after they have taken three hours dual instruction under the supervision of a competent pilot on the model or type they intend to fly.

"Limited-Commercial and private pilots, under this classification, shall, in addition to the dual instruction required above, complete two hours solo flight on the model or type aircraft they intend to fly, before carrying passengers as authorized in their certificate of competency. Both the dual and solo time required under this regulation will be certified to in the pilot's log book by the supervising pilot."

It is understood the new regulation is intended to prevent accidents caused by pilots with little flying time taking up planes of larger size on which they have had no flying time, and especially carrying passengers under such circumstances.

Evansville Manager Resigns

Evansville, Ind.—Ivan Hillyard, manager of Municipal Airport who resigned effective Apr. 1, has been succeeded by H. F. Carlson, retired Army pilot. Hillyard, airport manager during the last five years, said he will give his full attention to Hays-Hillyard Flying Service.

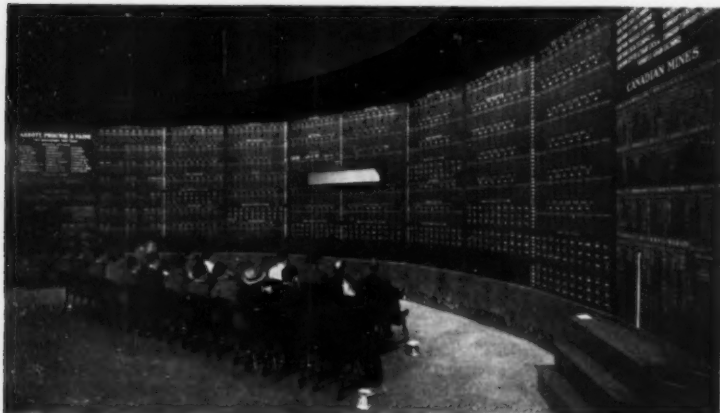
Wilson Named to Board

Gill Robb Wilson, president of the National Aeronautic Association, has been appointed to the national board of judges of the \$15,000 Shell Aviation Awards competition, replacing Charles F. Horner, former NAA president. The fund was established to provide inter-collegiate aviation scholarships for student pilots and awards for colleges, sponsors and flight schools participating in the CAA pilot training program.

Joins Turner School

Virgil Simmons, former Army and Navy flying instructor, has joined the staff of the flying school operated at Indianapolis by Col. Roscoe Turner. He will be in charge of ground instruction and instrument flying.

Electrically Registered Flight Data Instead of Stock Prices



Photos show a typical automatic stock quotation board in a brokerage office, at left, and the central transmitting station of the Teleguide Corp., New York City. The automatic flight progress board to be installed at Washington Na-



tional Airport will be based on the same principle, capable of maintaining an accurate check on a large number of ships and eliminating manual detail as at present. Story on opposite page.

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By Request...

● **AMERICAN AVIATION DIRECTORY** has been produced by request. For 18 months letters have been coming to us requesting a workable, adjustable and comprehensive directory for aviation. One of our New Year's resolutions was to compile such a directory—and here it is. But you'll have to see it to appreciate its value . . . to realize what it will mean to the industry as a time and money saver . . . to understand that we are not exaggerating when we say "It's just what you've been waiting for—it's got everything!"

The aviation industry has grown so fast and vast that no one can remember the names, addresses and occupations of key personnel. The rapid personnel turnover in aviation causes the waste of much valuable time checking up on who has gone where, or who is who in a particular company, or in trying to discover the correct title, initials or address of a certain individual. But no more precious minutes and hours need be wasted locating John Doe or finding out who are the Vice-Presidents or purchasing agent of a certain aviation company. *This new, compact, and complete aviation directory has all the answers.*

AMERICAN AVIATION DIRECTORY is not merely a "directory issue" of **AMERICAN AVIATION** magazine. It is not an inadequate "who's who in aviation" or just an alphabetical listing of aeronautical names, but it is a complete and separate 200 page publication giving the names of more than 300 companies and 6000 individuals all taking a recognized part in the aviation industry located in the United States, Canada and Latin America.

To enhance the usefulness of this directory, all data have been indexed and cross-indexed. Company listings are alphabetical with occupational breakdown. Individual listings are alphabetical and coded so that there will be no unnecessary thumbing through pages. All firms and organizations actually operating and recognized in aviation have been included and, to insure that the listings are correct as of the date of publication, last minute page proofs have been sent to all firms and organizations entered.

AMERICAN AVIATION DIRECTORY has been produced for use. Leading aviation executives have informed us of their needs and we have tried to meet them. The directory is easy to use and easy to handle. Its cover of **AMERICAN AVIATION** red makes it easy to find. See center column for sample page.

During 1940 this directory will be published in two editions. The first will be available April 20th and the second on or about the first of September. Thus, for the first time, the aviation industry will have a standard and permanent directory service.

A Preview

Here is a sample page, a
AMERICAN AVIATION

M-135
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12910 Taft Avenue
Cleveland, Ohio.

PESCO PRODUCTS. Aircraft Fuel Vacuum & Hydraulic Pumps, Oil Separators, Suction Relief Valves, Safety Check-Pressure Regulating-Hydraulic Control, Flow Equalizing, Fuel, Pressure Reducing and Other Valves. Pressure Accumulators, Hydraulic Cylinders, Hydraulic Locks, Hydraulic Motors, Propeller Anti-icing Pumps, Feathering Pumps, Combination Pumps, Accessory Drive Gear Boxes.

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Calumet Steel Division, 310 S.
Michigan Ave., Chicago, Ill.

Howard E. Blood, Pres.,
Detroit Gear & Machine Div., 670
E. Woodbridge St., Detroit, Mich.

G. A. Shallberg, Attorney,
310 S. Michigan Ave., Chicago, Ill.

D. E. Gamble, Gen. Manager,
Borg & Beck Div., 6558 So. Menard
Ave., Chicago, Ill.

Ralph H. McQuat

Advertising Agency:

The G. M. Basford Co.
Leader Building
Cleveland, Ohio

General Counsel:

Carl F. Shuler
950 Union Commerce Bldg.
Cleveland, Ohio

Accounting Department:

John L. Menart, Ass't Sec'y.

Purchasing Agent:

C. G. Fox

● Over 300 companies are listed in this manner. F
been broken down into major classifications. Each o
paper. The individual index, which is cross-reference
features are designed to make this directory an indi
industry. See column to the right for outline of direc

AMERICAN AVIATION DIRECTORY is a fitting comp
and AMERICAN AVIATION DAILY...

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Menard

Sales Manager:

John Harding, Jr.

Ass't Sales Manager:

Frank H. Clewers

Chief Engineer:

Jay M. Roth

Chief Designer:

E. F. Wichorek

Plant Superintendent:

H. H. Brooksieker

Service Manager:

Karl H. Dittmann

Labor Union Affiliation

None

Licensed Manufacturer for

British Dominions:

The Plessey Company Limited

Pesco Pump Division

Vicarage Lane

Ilford, Essex, England

Sales Representatives:

Pacific Coast: Airsupply Company,
5959 W. 3rd St., Los Angeles, Cal.

Atlantic Coast: Mr. Hank Miller,
3350 Country Club Rd., Bronx, N. Y.

Middle West: Aircraft Steel & Supply
Company, 419 N. Water St., Wichita,
Kansas. Supply Division, Inc., Lam-
bert Field, Robertson, Mo.

South America: Aircraft Export Corp.,
30 Rockefeller Plaza, New York, N. Y.

Canada: Canadian Pratt & Whitney
Ltd., Longueuil, P. Q., Canada

Roumania, Poland & Turkey: U. S.
Ordnance Engineers, Inc., 2200
Scranton Rd., Cleveland, Ohio

Netherlands: N. V. Technisch Bureau,
Ligtvoet & Besencon, Juliana van
Stolberglaan 30, S-Gravenhage,
Holland

Sweden: System Paulin Aktiebolag,
Kungsgaten 33, Stockholm, Sweden

Belgium: Rene Hedo, 686, Chaussee
de Waterloo, Bruxelles, Belgium

China: The Intercontinent Corp., 30
Rockefeller Plaza, New York, N. Y.

is manner. For quick reference these companies have
tions. Each classification is printed on different colored
cross-referenced, is a separate section. These special
ectory an indispensable aid to everyone in the aviation
outline of directory data.

At Your Service...

● The following outline indicates briefly the scope of information in each of the major sections of the directory:

AIRLINES

This section contains the complete administrative personnel of every scheduled air carrier in the United States and Canada, listing with correct titles and specific addresses all directors, company officials, system and regional traffic and operations managers, advertising and publicity directors, general counsel, advertising agencies and a host of other officials engaged in administrative work.

AIRCRAFT and ENGINE MANUFACTURERS

This section lists directors, executives, chiefs of engineering, production and research departments, section heads, supervisors, inspectors, sales managers, export and factory sales representatives, dealers and distributors, and purchasing agents. In addition, it gives valuable data concerning production and plant facilities.

MAJOR ACCESSORY COMPANIES

This section lists the manufacturers of standard and special equipment for aircraft and engines, as well as the makers of Machinery, Tools, Instruments, Radio, Electrical Equipment, Airline and Airport Accessories. All officials of each company and a complete list of products manufactured for the aviation industry are included.

GOVERNMENT AVIATION OFFICIALS

This section covers the Civil Aeronautics Authority, Army and Navy, National Advisory Committee for Aeronautics, Congressional Committees, State and local aviation officials, Foreign government aviation officials and related groups.

Other sections include EXPORT SALES REPRESENTATIVES, AVIATION ORGANIZATIONS AND ASSOCIATIONS, AIRPORT MANAGERS AND SERVICES, AVIATION SCHOOLS, AVIATION WRITERS, EDITORS, AND PUBLICATIONS, OIL COMPANIES, FINANCIAL UNDERWRITERS, INSURANCE COMPANIES, etc.

No important item has been omitted—the directory is complete and up-to-date. No one in aviation can afford to be without it.

● Numerous features are being added to make the Directory an invaluable reference book. A list of air carriers in Alaska, with officials, routes and equipment will be included. Another feature is a complete recapitulation of air carrier certificates, rate decisions and new route applications with dates of filing, dates of hearings and dates of decisions. Other features of this nature will be added from time to time.

complement to AMERICAN AVIATION

Y... The indispensable trio of Aviation Services

1 1 1 **Prices and Discounts** 1 1 1

Two 1940 Editions—Spring (April 20) and Fall (September 15)

(Note: In 1941 the Directory will become a quarterly publication with issues in January, April, July and October. Subscription prices for 1941 will be announced later).

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3.00 per single copy (either edition).

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The above rates are applicable only when ordering direct from the publisher, and are only for the two 1940 editions.

For convenience of both purchaser and publisher, orders within a company should be consolidated to avoid duplications and confusion. When main offices order for branches, the latter should be notified to avoid duplicate purchases.

Checks and orders should be made out to American Aviation Associates, Inc., Earle Building, Washington, D. C.

AMERICAN AVIATION ASSOCIATES, INC.

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Washington, D. C.

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Please send us _____ copies of the 1st Spring Edition, it being understood that we will be entitled to subscription discounts if we order the Fall Edition later.

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Pictures Give Idea of Size of Army's Douglas B-19

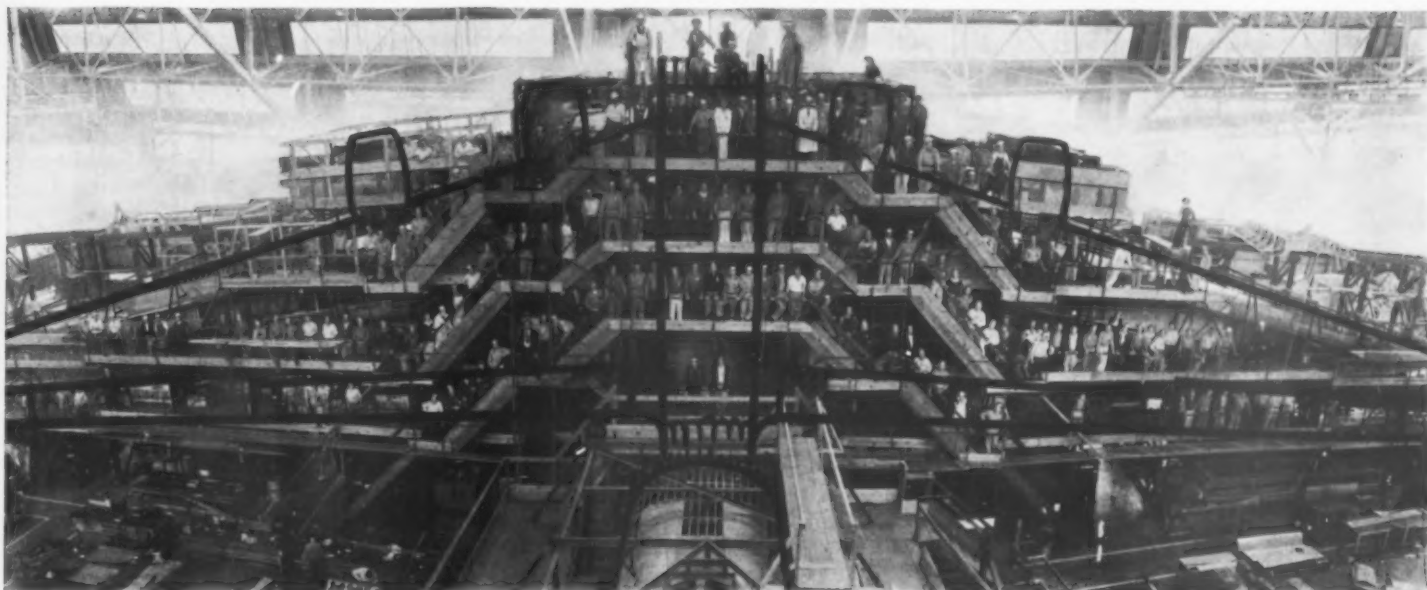
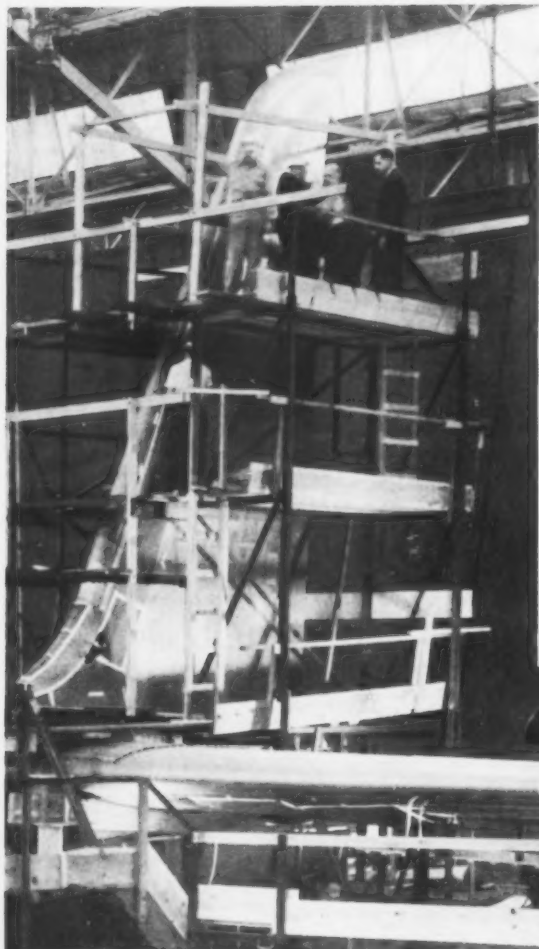


Photo diagram above shows the Douglas B-19 long range bomber as it looked in its steel jig at the Santa Monica plant. Black lines drawn on photo show the size of the center section and wing, minus 12 feet of tips, in a vertical position in which it has been built by 500 craftsmen and 100 engineers, 200 of whom are shown on the jig's seven working levels. It is believed to be the first time that a plane's center section has been constructed vertically in this manner. This photo was taken from the tail section. The two sections are to be joined together shortly.

Some idea of the great size of the Douglas B-19, the super-bomber being built by Douglas Aircraft Co. for the Army Air Corps, can be obtained from the view (left) of the tail section. The vertical fin, shown in scaffolding, towers nearly five stories above the ground. Note size of workmen in comparison. The first flight of the bomber is scheduled for late summer from Clover Field, Santa Monica, Cal. The ship will have a gross weight of about 70 tons fully loaded and a range of over 6,000 miles. Useful load will be 28 tons. The wing span is 210 feet. Of all-metal construction, the B-19 will have completely retractable tricycle landing gear, nose wheel and huge all-metal flaps.



Douglas B-19 to Have Four Wright Duplex Cyclones

The powerplant for the big new four-engined Douglas B-19, largest land bomber built to date for the Army Air Corps, will consist of four Wright Duplex Cyclone engines according to information from Curtiss-Wright Corp. The War Dept. did not include powerplant information in the brief release of a few of the plane's specifications recently.

The Duplex Cyclone was announced last May by the War Dept. and was

approved last December by the Civil Aeronautics Authority for commercial operation with a rating of 2,000-hp. Although the War Dept. release indicated the B-19 would have a powerplant of 6,000 hp., the actual power produced will be about 8,000 hp.

Spartan Sales

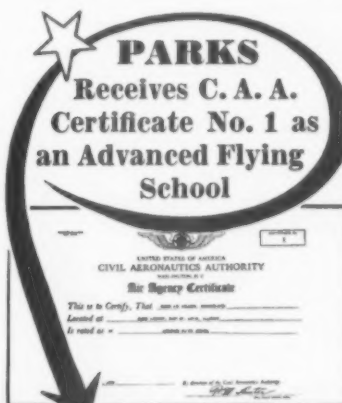
Spartan Aircraft Co., Tulsa, Okla., reported March 25 it had sold six Spartan "Executive" 5-place cabin planes, Model 7W, in the past 90 days for a total of \$150,000.

R. W. Hardesty Appointed PCA Chief of Stations

R. W. Hardesty, station manager for Pennsylvania-Central Airlines at Detroit, has been appointed chief of stations for the line. C. Bedell Monro, president, has announced. He assumes his duties April 1 with headquarters in Pittsburgh, succeeding Edward Sullivan who has been named general traffic manager. Hardesty has been with PCA since 1935, having been station manager at Pittsburgh and Detroit. Born in Lakewood, O., he is a graduate of Miami University at Oxford, O., and is married.

NA Attack Bomber Ready

North American Aviation Inc., Inglewood, Cal., now has available for export a twin-engined attack bomber listed as the NA-40-A, rated at approximately 300 mph., depending on engine installation. Officials at North American expressed conviction that huge Allied orders can be handled—including trainer contracts—provided engines and propellers become available.



The new Air Agency Certificate No. 1, Training Parks Air College as an Advanced Flying School has just been issued to the college by the Civil Aeronautics Authority. It's additional proof of the widespread recognition accorded the high standards of training maintained at Parks.

In fact Parks has enjoyed the approval of the Federal Government as an Advanced Flying School longer than any other aviation school in the country. On July 15, 1929, Parks was granted a certificate of approval issued by the Department of Commerce as a Transport, Limited Commercial, Private, Ground and Flight School.

Through the years since that date, Parks graduates have contributed much to aviation's progress; many have risen to positions of leadership and responsibility.

Parks trained men are well-equipped to serve you too. A letter to Oliver L. Parks, President, will bring information concerning graduates that may be available now.

PARKS AIR COLLEGE, Inc.
East St. Louis, Illinois

AMERICAN AVIATION

The Independent Voice of American Aeronautics

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Fortnightly Review

(Continued from page 1)

only has no ambitions to compete later on with existing airlines, but is willing to have this definitely stated in its certificates—stated in unmistakable terms. But it is plain to see that some sort of official policy must be forthcoming from the Authority before apprehension on the part of some carriers is removed. Not all prospective feeder operators may be so willing to demonstrate their integrity as All American Aviation Inc.

Not having talked with all of the primary operators on the subject, we don't know what would satisfy them as a matter of policy, but most of them, at least, would feel free to endorse feeders if they could be assured that a certificate of public convenience and necessity for a route that is obviously classed as a feeder would permanently prevent the feeder operator from non-stop operations in competition with existing primary routes. At least one major carrier is even willing to have a feeder carry through passengers between its own terminals, providing the feeder will make all scheduled stops and not engage in non-stop operations. Several major carriers have indicated that they themselves may operate feeder lines.

Now that a streamlined Authority is in the offing under the President's reorganization of Apr. 2, the five members of the Authority will have much more time to devote to policy matters. This important question of the place of feeder lines in the larger air transport network is one that should be settled before any more lengthy hearings, costly to both the feeder airline operator and the major airlines legitimately intervening, are conducted. There is a place for feeders, but it is unfair to major operators not to have the limitations of feeder airlines clearly outlined and stated in the certificates under which they will operate.

Education By Plane

THE news flashes of air transportation today will become commonplace items tomorrow. It is of note, for example, that the students of Frances Shimer Junior College at Mt. Carroll, Ill., spent their Easter holidays as members of a "Flying Geography Class" visiting historical points in New York, Washington and Annapolis. The nineteen girl students flew in an American Airlines Flagship. In the years immediately before us, we will see the airplane used increasingly for school purposes. As passenger fares become lower and the airplane begins to reach its destined goal as the cheapest mode of travel, school classes in the east will be able to spend a week-end studying the geological wonders of the Grand Canyon in the west, and students in the west can have an instructive visit to the skyscrapers of New York to supplement their class room education. Ten years ago the school boy or girl in the plains of the middle west who had seen real mountains was truly envied. Air transportation will make it possible for long-distance week-end trips to be made in connection with school studies. The plane removes the barriers of distance.

The airplane has unlimited new uses in the realm of transportation, to weld together cities and regions within a great free country. Even the novelty of transporting Buckram Beagles in a TWA chartered ship from Long Island to Sewell, N. J., as was done recently, has its part in opening up new benefits of air transport. In furthering the fields of sport and education the airplane has only begun to make its mark.

Airline and R. R. Safety

IN a release issued Mar. 27, one day after the scheduled air transport industry had completed one full year of operations without a single fatality, the American Association of Railroads stated: "Railroads provide the safest form of transportation available in the United States" and then added the following: "For every passenger fatality in 1939, the railroads transported 840,000,000 passengers a distance of one mile, compared with 35,500,000 passenger miles in 1888."

On Mar. 26 the airlines had flown 814,906,250 passenger miles with no fatalities. Perhaps in a manner of figuring the railroads have something to boast about by transporting 840,000,000 passengers a distance of one mile *per fatality*, but to our way of thinking a *perfect* safety record in a new form of transportation is much the greater accomplishment. In 1888 the railroads had been in existence for half a century, yet the safety record was 35,500,000 passenger miles per fatality. Compare this with the youthful air transport industry—fourteen years at the outside—and the airlines have accomplished a record for safety unprecedented, as Col. Edgar S. Gorrell has pointed out, in *any* system of transportation.

We add our congratulations to the many that have been voiced. We think credit should go to Senator Pat McCarran and Representative Clarence Lea, co-authors of the Civil Aeronautics Act; to Robert H. Hinckley, chairman, and the four other members of the Civil Aeronautics Authority; to Clinton M. Hester, the administrator; to Tom O. Hardin, chairman of the Air Safety Board and his colleague, C. B. Allen; to the presidents and operating personnel of every airline; to the entire personnel of the Civil Aeronautics Authority and of the U. S. Weather Bureau; to Col. Edgar S. Gorrell, president of the Air Transport Association, and to David L. Behncke, president of the Air Line Pilots Association.

America's Minor Shave

IT MAY come as a surprise to some that America's 35,900 miles of scheduled airlines within its continental borders form only 7.2 per cent of the world's total of 499,300 miles of scheduled air services. Mr. Clinton M. Hester, Administrator of the Civil Aeronautics Authority, gave these figures in a recent address before the Society of Automotive Engineers. The United States has 39.7 per cent of the world's railroad mileage and 53 per cent of the paved highways, but less than ten per cent of the scheduled airlines. Of course the United States can also claim credit for its foreign airlines operating in Latin America, in Alaska, and across the two oceans, all of which add 72,600 miles of routes to the American total. That brings our share to 27.1 per cent but even this figure is low in comparison to our share of railroads and paved highways. These totals refer only to the airline mileages and it must be pointed out that there are hundreds of airlines in various parts of the world operating only once a week or a few times a week, especially in Russia. Another consolation is that American-built airplanes fly on many of the world's finest airlines. The figures do show, however, that in many countries where railroad and highway building has lagged behind, the airplane has forged ahead as a common and predominant means of transportation.

Good Aviation Writing

ORCHIDS go to two newspaper columnists for intelligent writing about aviation. Raymond Clapper, well known and highly respected political columnist in Washington, has discussed air transportation in two recent columns. His frequent use of airplanes on business trips has provided him with a good background and his applause to the airlines for the safety record won't hurt the business. "Airlines have done something that the railroads have not succeeded in doing yet," he commented, "They have learned to treat passengers as welcome guests and not as intruders."

The other columnist is Ernie Pyle, who roams about the continents writing for the Scripps-Howard syndicate. He was once aviation editor of *The Washington News* but only occasionally does he write about aviation nowadays. But when he does, he wallops a punch. His recent series of articles on the air freight activities of TACA in Central America are among the finest bits of aviation writing on the books. Ernie Pyle is a "newspaperman's reporter," the best columnist of his kind in the nation. His stories of TACA's operations cannot help but have an enlightening effect and serve to give attention to the job Lowell Yerex has done to bring air service to a part of the world where even automobiles and trucks are never seen except in the larger cities.

Capital Notes

THE ANNUAL WAR DEPARTMENT APPROPRIATION bill for military activities put the House of Representatives on record as favoring delayed deliveries of airplanes for the national defense. For not a voice was raised in protest to the appropriation committee's recommendation that only 57 planes instead of 496 be purchased for replacement purposes. The Army asked for no new aircraft, since funds have already been provided to cover all procurement up to 5,500 total authorized for the Air Corps expansion program.

Representative Snyder (D., Pa.) pilot of the bill, carefully explained that the administration plans to hold off deliveries on 2,200 planes in order to accommodate foreign buyers and simultaneously allow the Army an opportunity to obtain more advanced models in line with the new policy: "If we are going to forego for the present 2,200 planes, the committee felt that procurement of practically all of the 496 planes might be deferred as well." At the same time, the committee approved only \$10,000,000 of a \$30,000,000 request for contractual authority, said to be necessary because aircraft costs are increasing.

Contracts have already been awarded for the 2,200 planes, intended as reserves. In fact, all 5,500 Air Corps planes are now on order except for 186; bids have been opened for 144 liaison planes and 42 four-engine bombers under option. Deliveries are expected to start rolling in in quantities by early summer. About 772 new airplanes will begin Army service during 1940; 2,555 during 1941, according to present official estimates.

Meanwhile, actual air combat in the war overseas has changed the Army's ideas as to the average life span of modern fighting ships. A pursuit plane is now considered obsolete after 4 years instead of 6, medium and attack bombers after 5, heavy bombers and observation planes after 6 years. Army transports are given 8 years and all others 10.

The appropriation bill has gone over to the Senate where it is expected to go through in about the same form.

EXCITEMENT OVER THE NEW RELEASE POLICY quickly died down after Secretary of War Woodring testified in a dramatic hearing before the House Military Affairs Committee. Assuring Congress that the policy is unanimously favored by top-ranking administration officials—despite recurrent rumors of divided opinion—the department settled down to the task of working out procedural details with industry representatives.

From the industry viewpoint, the present scheme presents several tough problems. Chief among these is the question of allocating development costs. Before prices can be quoted to the Allies on planes originally ordered for the Army, manufacturers and government experts must figure out how much has been spent by the government and by the manufacturers to develop these models, so that this cost can be passed on to our European customers. The funds thus indirectly recaptured are to be used for development on newer designs for the services.

Another anxiety of producers arises from uncertainty as to the price the government expects to pay for the newer models. Assistant Secretary of War Johnson is outspoken in emphasizing that the War Dept. will be hardboiled on the cost question. As the advanced types are to be supplied under existing contracts in the form of "change orders," without the routine of reopening bids, manufacturers are wondering whether they will be expected to furnish these new ships at the same—or too close to the same—contract price. They can be sure of one thing: that the government is going to hold out for the best deal it can put across.

Meanwhile, isolationists, led by Senator LaFollette of Wisconsin, have been silenced in their attempts to prevent the sale of American airplanes abroad. Still "not satisfied," the Senator has so far devised no other scheme to halt or delay the program since the Senate Military Affairs Committee nimbly sidetracked his resolution to investigate.

THE AIRPORT EXPANSION PROGRAM has been hanging fire because its chief sponsor, Senator Pat McCarran, was occupied with the reciprocal trade treaty issue. According to present prospects, the most that can be expected at this session is passage of the authorizing legislation. This would leave until next year the appropriation of the money to put the program into effect. In the meantime, there is a strong undercover lobby working for the bill.

AERONAUTICAL RESEARCH is becoming more intensified than ever, both through the government and the industry. The War Dept. has asked the National Academy of Sciences to "get the best brains in the country to go to work on how to get cheaper airplanes." In other circles, efforts are going forward toward development of new metals and improvement in propeller performance, while the National Advisory Committee for Aeronautics has completed plans for a new engine laboratory toward which it is hoped \$2,000,000 will be made available this year.

REGULATION OF FREIGHT FORWARDERS by uniform federal law is expected to be considered in public hearings by a Senate Interstate Commerce Sub-committee later in the spring. Bills introduced in both houses as a working basis for the first legislation supervising this industry specifically authorize the use of air carriers by freight forwarders.

Greenhoff With CCA

Hans Greenhoff, photographer who has contributed widely to aviation magazines, has been appointed official photographer for Canadian Colonial Airways.

United Department Moves

Larry Armond, head of United Air Lines' reservations department in Los Angeles, has announced removal of his department to the company's downtown office at 508 W. 6th St.

Private Flying and Transport Sessions Of Natl. Safety Council in N. Y. April 17

The program for the regional meeting of the aeronautical section of the National Safety Council to be held April 17 at the Pennsylvania Hotel in New York has been announced. Presiding at the private flying session at 9:30 a. m. will be Gill Robb Wilson, president of the National Aeronautic Association, and Major R. W. Schroeder, vice-president of United Air Lines and vice-president of the aeronautical section of the council.

Chief address will be given by Grove Webster, chief of the private flying division of the CAA, to be followed by a discussion with the following taking part: Richard S. Boutelle, director of the CAA bureau of safety regulation;

David S. Little and William F. Lear, for radio; Roger Wolfe Kahn and Laurence P. Sharples, for private pilots; James Guthrie and Major Robert Copey, for airports; Earl Ward and Fred Smith, for the federal government; Douglas O. Langstaff and Charles L. Morris, for state commissions.

At the air transport session at 2 p. m., C. R. Smith, president of American Airlines, and Major Schroeder, will preside. Speakers will be Theodore P. Wright, director of engineering for Curtiss-Wright Corp.; S. Paul Johnston, coordinator of research, NACA; and Tom O. Hardin, chairman of the Air Safety Board.

MATTIX NAMED

Made Chief of Automotive-Aeronautics Trade Division

Appointment of Paul R. Mattix as Chief of the Automotive Aeronautics Trade Division

of the Bureau of Foreign and Domestic Commerce, Commerce Department, was announced late in March. Mr. Mattix succeeds Irving H. Taylor, who resigned a year ago to join the Aeronautical Chamber of Commerce. Mr. Mattix has been acting chief in the interim.



Mattix

After serving in administrative positions with several large automotive concerns, Mr. Mattix joined the Bureau in March, 1924. He was promoted to be assistant chief of the division in February, 1936. He was a commissioned officer in the Army Transport Corps during a period of the first World War. During his service with the Bureau he has developed and supervised many forms of trade promotion services which have received the commendation of his superiors and the industries which they were designed to serve.

Obituary

ALLEN A. CANTON, 50, an inventor of aeronautical devices and an executive of Canton Aeronautical Development Corp., New York, died on Mar. 20 at his home in New York. He formed the corporation last year to improve radio-beam reception in flying.

J. M. "JAKE" MOELLENDICK, 66, identified with Wichita Airplane Corp., which was chartered in 1920, died in a Wichita, Kan., hospital on Mar. 22. Associated with him in the corporation were E. M. Laird, its founder, and George E. Weaver.

LT. CLARK N. PIPER, 34, Army Air Corps officer at Wright Field, Dayton, O., died Mar. 12 at Dayton. He was graduated from the U. S. Military Academy in 1930 and went to Wright Field on July 15, 1937.

DR. E. H. JOHANN SCHUETTE, 67, colleague of Count Zeppelin and co-founder of Schuette-Lanz Airship Works, died at Dresden, Germany, on Apr. 1 after a long illness. The airship works during the World War produced 20 Zeppelins and 1,000 airplanes.

CORA STERLING, 25, widely known stunt flyer of Seattle, Wash., was killed in a plane crash near Boeing Field, Seattle, on Mar. 31. Last year Miss Sterling was elected president of the Associated Women Pilots of the Northwest.

BOA Buys 100 Wrights

British Overseas Airways Ltd., new company representing the merged Imperial Airways and British Airways, has purchased more than 100 1,100-hp. engines from Wright Aeronautical Corp., it was reported on Apr. 2. Deliveries have been made over a period of several months.

Gen. E. J. Stackpole, Jr. Promoted to Major General

The National Guard Bureau of the War Department announced March 27 the promotion of Brig. Gen. Edward J. Stackpole, Jr., to major general of the line to rank from Feb. 23, 1940. He has been assigned to command the 22nd Cavalry Division composed of units in Pennsylvania, Ohio and Kentucky with headquarters in Harrisburg, Pa. General Stackpole is secretary-treasurer and a director of American Aviation Associates, Inc., AMERICAN AVIATION, AMERICAN AVIATION DAILY and AMERICAN AVIATION DIRECTORY. He is also publisher of The Harrisburg Telegraph and President of the Telegraph Press.

General Stackpole has a distinguished military career, having served as a commissioned officer in the 110th Infantry and participated in the Champagne-Marne defensive, the Marne-Aisne offensive, and at Oise-Aisne. He was wounded three times in France at Le Châmel, on the Vesle, and on the Aisne. For his World War service he was awarded the Distinguished Service Cross and the Purple Heart.



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AIR LINES
America's Fastest

AIR CARRIER RECORD

(C. A. A. Applications, Hearings, Dockets)

Panagra Recommended

CAA Examiner F. A. Law, Jr., in a proposed report on Mar. 25 recommended 'grandfather' certificates for Pan American-Grace Airways. Complete story on this page.

Puerto Rican Line Referred to Attorney General

The CAA has referred to the Attorney General for action the case of Aerovias Nacionales, Inc., San Juan, Puerto Rico, for operating a plane without an airworthiness certificate. Complete story on page 12.

National Gets Daytona Beach-Jacksonville

National Airlines on Mar. 22 was awarded an extension of AM31 from Daytona Beach to Jacksonville, linking its two routes. Applications of Eastern Air Lines for Florida routes were denied by the CAA. For complete story, see AMERICAN AVIATION, Apr. 1, page 20.

PAA Asks Directorate Approvals

Pan American Airways is seeking CAA approval of A. M. Archibald as assistant vice president of Pan American Airways, Inc., PAA (Del.), PAA (Nev.), Pacific Alaska Airways, and Pan American Airways Corp.; Franklin Gledhill as vice president and purchasing agent of the same companies; James H. Johnston as assistant vice-president, and Andre Preister as vice-president and chief engineer. Approval of interlocking directorates involving Virgil E. Cheneva and Pan American Airways, Inc., Pacific Alaska, PAA (Del.) and PAA (Nev.) is also sought.

CAA Seeks Canadian Depositions

The CAA has appointed a commissioner and is seeking Canadian depositions concerning stock sales of Marquette Airlines. Complete story on page 10.

Mid-Continent Withdraws Kansas City-Denver

Mid-Continent Airlines has withdrawn its application for a route between Denver and Kansas City. Complete story on page 12.

American Asks Two New Routes, AM7 Stops

Applications for Cincinnati-Philadelphia and Cincinnati-Pittsburgh-Scranton-Wilkes-Barre routes were filed by American Airlines on Mar. 30. The company also asks stops at Windsor, Ont., and Niagara Falls, N. Y., on AM7, New York-Chicago. Complete story on page 8.

CAA Acts to Speed Hearings

The CAA on Mar. 26 announced that pre-hearing conferences will be held before all economic proceedings. Complete story on page 3.

TWA Files Exceptions to UAL-WAE Report

TWA on Apr. 1 filed 97 exceptions to the proposed report of Special CAA Examiner Roscoe Pound, which recommended that the application of United Air Lines for permission to merge with or acquire the assets of Western Air Express be approved.

Tri-State Oral Argument

Oral argument on the advisory report issued recently by CAA Examiner Robert J. Bartoo recommending that Tri-State Aviation Corp. be denied a "grandfather" certificate was held Mar. 21 before CAA Members Harilee Branch, G. Grant Mason Jr., Oswald Ryan and Edward P. Warner. Complete story on this page.

Pan Am Los Angeles-Mexico City Hearing

Hearing was held Mar. 21-26 on application of Pan American Airways Inc. for a new route from Los Angeles to Mexico City via Hermosillo, Mazatlan and Guadalajara. American Airlines appeared as intervener. Complete story on page 12.

Seattle-Juneau Route Recommended

CAA Examiner Frank McIntyre, in a proposed report on Apr. 3, recommended that Pacific Alaska Airways, Pan American subsidiary, be awarded a mail-passenger-express route between Seattle and Juneau via Ketchikan. Complete story on page 23.

Air Travel Card Investigation

Hearing was still in progress as this issue went to press on the CAA's investigation into the air travel card plan, government discount provisions and other special discounts. Complete story on page 10.

Branniff Asks Kansas City-Washington

Branniff Airways will file application with the CAA for a route between Kansas City and Washington via Jefferson City, St. Louis and Louisville. Complete story on page 10.

New TWA Service Sought

TWA intends to file application for an amendment to its AM2 certificate to include St. Louis-Amarillo and Winslow-San Diego-Los Angeles service. Complete story on page 8.

PCA Asks Baltimore-Pittsburgh Mail

Pennsylvania-Central Airlines has filed an application with the CAA asking that mail be placed on its passenger-property route between Pittsburgh and Baltimore. Two round trips a day would carry mail.

CAA Provides Payment for Horta Mail

The CAA on Apr. 4 issued a decision clarifying its original order setting Pan American Airways trans-Atlantic mail rates, by providing payment of \$4.00 per lb. for mail destined for Horta, when mail loads exceed 1,600 lbs. The decision states: "The foregoing rates are for a maximum mail load of 1,600 lbs. per trip outbound, and petitioner shall receive additional compensation for any mail transported in excess of such load of 1,600 lbs. as follows: on trips proceeding as far as Lisbon, \$4 per lb. for outbound mail transported from the United States to Horta . . . or

Lisbon, or points beyond; provided that petitioner shall not be entitled to any compensation in excess of such \$4 per lb. for the transportation of mail in excess of 1,600 lbs. per trip to points beyond Lisbon . . . or Poyanes, as the case may be."

Eastern Protests CAA's National Decision

Eastern Air Lines on Apr. 6 asked rehearing, reargument or reconsideration of the CAA's Mar. 21 order granting National Airlines an extension of AM31 from Daytona Beach into Jacksonville. Pointing out alleged inconsistencies in the decision, Eastern stated that the Mar. 21 order "should be revoked in its entirety and an order made denying the applications of National in this proceeding, and granting to Eastern the certificates of public convenience and necessity requested in its application in this proceeding." Eastern had requested various routes in Florida, and all were denied by the CAA.

TWA Protests United's Proposed Boeing Fares

TWA recently filed a protest against the proposed reduced fares of United Air Lines between San Francisco and Los Angeles in Boeing 247-D equipment. Complete story on page 10.

Calendar of Hearings

May 1—Pan American Airways, application for setting of mail rate on third trans-Atlantic schedule.

May 6—Pennsylvania-Central Airlines, for extension of AM34 to furnish Baltimore-Atlantic City and Atlantic City-Camden service.

June 3—Boston-Maine Airways, extension of AM27 from Bangor to Moncton, N. B.

(All other CAA hearings have been temporarily postponed following announcement that conferences will be held before proceedings. Dates will be set at the conferences if it appears that parties are prepared.)

'Grandfather' Permits Asked for Panagra

Recommendation that Pan American-Grace Airways be awarded a "grandfather" mail-passenger-property certificate between Cristobal and Buenos Aires was contained in a proposed report issued Mar. 25 by CAA Examiner F. A. Law, Jr.

The route recommended is as follows: Cristobal, via Cali, Tumaco, Guayaquil, Talara, Trujillo, Lima, Arequipa, Arica, Antofagasta, Santiago, Mendoza and Cordoba to Buenos Aires, with a complementary or alternative service connecting at Arequipa and Cordoba to, from and between such points and the intermediate points La Paz, Oruro, Uyuni, Villazon, Jujuy, Salta and Tucuman.

Examiner Law also recommended a passenger-property "grandfather" certificate between the terminal and intermediate points named above and Chiclayo, Peru, and between Arica, Chile, and La Paz, Bolivia.

The principal issue in the proceeding, Law said (as in his report on Pan American Airways' South American routes, released Mar. 19), is the extent to which terminal and intermediate points shall be named in certificates outside the United States. Panagra had urged only a general designation of the routes.

"Normally, a direct relationship may be expected to exist between the cost of operation and maintaining service to named points, or operating elsewhere as the whims, or even the needs of the applicant may require," Law said. "If a general designation of the routes be given, a general discretion will, by that action, also be accorded the holder of the certificate as to the point or points which it will serve irrespective of its past undertakings, and to that extent deprive the Authority of its control over the cost of such service to the United States as reflected in mail rates, and make more difficult the fulfillment of its duty to promote the welfare of the postal service. The best test of the practicability of naming terminals and intermediate points is the operation experience in the past."

"To execute the basic intent of the Act requires the designation of terminal and intermediate points with sufficient particularity to define the particular areas which shall continue to receive the service covered by an application under the 'grandfather' clause. The designation of contract points must, therefore, be regarded as necessary, as indeed such designation has been practicable in the past."

Tri-State Denies 'Inadequate' Service Found by Examiner

Oral argument was heard Mar. 21 on the advisory report issued recently by CAA Examiner Robert J. Bartoo recommending that Tri-State Aviation Corp. be denied a "grandfather" certificate on grounds of inadequate and inefficient service. Tri-State had sought a certificate for the transportation of property among various cities in Pennsylvania, Maryland and West Virginia.

John W. Cross, Tri-State counsel, told CAA Members Harilee Branch, G. Grant Mason Jr., Oswald Ryan and Edward P. Warner that the examiner had given entirely too much weight to incomplete flight records submitted during the hearing. The effect of the examiner's position, he asserted, is to base certification on the keeping of flight reports from May 14 to Aug. 22, 1938, rather than on service rendered.

The examiner, Cross charged, also neglected to give consideration to the basic difference in service offered by the applicant as compared with that expected from carriers of passengers and mail. Tri-State had only one purpose, the prompt delivery of packages, he said, and thus was justified in omitting intermediate stops whenever there were no pickups or deliveries for certain towns. It was pointed out that the company had operated on 79 of the 86 days scheduled for service during the grandfather period, most of the express articles being delivered within one day through the combined airplane-truck facilities provided.

Marquette Airlines, transporting passengers, Cross submitted, completed 110 of 128 scheduled trips during the grandfather period and was granted a certificate. John H. Wanner appeared as counsel for the CAA.

Boeing of Canada Expanding

Boeing Aircraft of Canada at Vancouver, B. C., has announced acquisition of a new property on which it will erect a building to accommodate an expansion of aircraft construction activity. Cost of the work will be about \$18,000.

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SEATTLE-JUNEAU LINK RECOMMENDED

Proposed Report Finds Pacific Alaska Airways Fit, Willing and Able to Furnish Service

Establishment of mail, passenger and express service between Seattle, Wash., and Juneau, Alaska, via Ketchikan, by Pacific Alaska Airways, a wholly-owned subsidiary of Pan American Airways, was recommended Apr. 3 in a proposed report issued by CAA Examiner Frank McIntyre.

Alaska is the only territory or dependency of the United States not now connected with the continental U. S. by regularly scheduled air transport service, the report noted, adding that the 945-mile proposed route will provide such a connection. It was pointed out that Alaskan industries are closely allied with business interests in Seattle, where most of the financing is arranged.

"Due to the fact that much of the work in the larger industries of the territory is restricted to the summer months there is a heavy movement of passenger travel to Alaska in the early spring and a comparable movement outbound in the late fall," McIntyre said.

"In addition there has been an increasing movement of tourists and sportsmen making the trip to Alaska during the summer months. The only form of transportation connecting the United States with Alaska is by boat and the record indicates that the available facilities are inadequate to meet the traffic demand.

"There is considerable testimony to the effect that the lack of adequate, efficient transportation facilities has hampered the proper development of the territory. It also appears that this situation will be accentuated by the existence of the European war, resulting in the withdrawal of some Canadian ships from service and an increase in the tourist travel to Alaska. A witness also testified that additional vessels to meet the demand for service were not obtainable."

Pacific Alaska plans to inaugurate two round trips a week on the route with a Sikorsky S-42-B four-engined flying boat. Service would be suspended from Oct. 15 to May 15. Year-round service with Boeing 307 land-planes is contemplated as soon as the equipment is available. Frequency will be four round trips weekly during the five summer months, and two trips weekly during the remainder of the year.

"Although the population of the territory of Alaska is comparatively small, the nature and extent of the business activities in this area and its attraction to tourists support a finding that considerable benefit will be derived by the public from the inauguration of the proposed service," the report said.

"The record clearly shows that the existing means of transportation to Alaska are inadequate and that the proposed service would substantially improve the existing means of passenger transportation as well as the existing mail service. Perhaps the most important consideration is the fact that the proposed service would aid materially in the expansion and development of the territory, which would be reflected by increased airline traffic. It appears that the maintenance of regularly scheduled airline operations between the continental United States and Alaska would also constitute a valuable addition to the national defense. For these reasons it is concluded that the public convenience and necessity require air transportation between Seattle and Juneau."

In finding that Pacific Alaska is fit, willing and able to furnish the service over the route, Examiner McIntyre noted that "the record indicates that the applicant will be unable to render an all-year service until it is possible to

BRAGG ASSISTS SMITH

New Braniff Executive, Formerly With Telephone Company, Aids In Organization Work

Olin E. Bragg has been appointed assistant to Robert J. Smith, Braniff Airways' vice-president in charge of operations, T. E. Braniff, president of the airline, has announced. Bragg assumed his new duties immediately and is making his offices in Dallas as the line's operations base. Born in Hot Springs, Ark., Bragg, until his appointment with Braniff, lived in



Bragg

Oklahoma. He has been connected with Southwestern Bell Telephone Co. for 11 years holding successive positions as special service representative in Oklahoma City, assistant manager in Oklahoma City and district manager in Durant for over five years.

In his new position he will assist Smith in organization work of the line's expanding operations department.

EDUCATOR JOINS UNITED

Prof. William A. Wheatley Is Line's New Director of School and College Relations

Prof. William A. Wheatley, former professor of education and guidance at State Teachers College, Edinboro, Pa., has been appointed director of school and college relations for United Air Lines, it was announced on Apr. 2 by Harold Cray, vice-president of traffic. Prof. Wheatley's son, William B. Wheatley, is chief test pilot for Consolidated Aircraft Corp.



Wheatley

Importance of air transportation, economically, civically and vocationally, is expanding so rapidly that United felt the need of adding an educator to its executive staff, Cray said. Prof. Wheatley is a co-author of two high school textbooks, "Occupations" and "Building Character and Personality."

Eastern Employs Two

More Navy Men as Pilots

Eastern Airlines has employed two more pilots. One is Otto B. Whitmore, 29, native of Canton, N. D., who has spent four years flying in the Navy. He made two non-stop flights from San Diego to Coco Solo, Canal Zone, and now holds the rank of Ensign in the U. S. Naval Reserve. Married and stationed at Miami, Whitmore spent three years at the University of South Dakota and one year at the University of Iowa.

Robert O. Anderson, 27, native of Grand Rapids, Mich., will be stationed at Newark. He holds the rank of Ensign in the Naval Reserve, having completed training at Pensacola in 1937. He served in the dive bombing squadron VB-5 at Norfolk and participated in the Caribbean fleet problem in 1939. He was later an instructor at Pensacola. He is married and is a graduate of the University of Michigan.

conduct operations with Boeing 307's when airports are available in the fall of 1941. This is a matter relating primarily to the safety of operation of the proposed route, and the proposed suspension of service in Oct. 1940, will be governed by the regulations of the Authority."

Revenue Passenger Miles Up 70.78% in February Over Year Ago, ATA Reports

Increase of 70.78% in revenue passenger miles flown by domestic airlines during Feb. 1940 over Feb. 1939 was reported by Col. Edgar S. Gorrell, president of the Air Transport Association. The Feb. 1940 figure is 53,025,818 compared with the 31,046,932 a year ago.

While revenue passenger miles flown

in Feb. 1939 dropped 10.98% from the Jan. 1939 total, the February figure of the current year represents a decrease of only 4.16% from the January mark of 55,234,672. Table of the revenue passenger miles operated in 1938-39 and for the first two months of 1940, together with the percentages of increase registered, follows:

	1938	1939	% Increase From Corresponding Previous Period
January	27,110,800	34,457,270	27.09
February	26,155,235	31,046,932	18.7
March	34,565,609	44,441,846	28.57
April	37,929,046	47,423,868	25.03
May	42,100,250	57,407,080	36.36
June	40,284,317	63,576,325	57.82
July	42,273,067	66,018,295	56.17
August	46,073,161	67,977,118	47.54
September	49,490,616	69,120,405	39.69
October	51,350,752	70,221,520	36.75
November	41,374,119	60,610,808	46.40
December	37,342,924	65,024,044	74.13
Total	476,039,896	677,325,511	42.28
January, 1940		55,234,672*	60.29
February, 1940		53,025,818	70.78

* Corrected January Figure.

VEGA NAMES HAUSMAN

Assistant to J. W. Cross Is Appointed Sales Engineer; a Lockheed Employee Since '37

Ed J. Hausman, for the last two years assistant to J. W. Cross in the Lockheed Aircraft Corp. Army and Navy control office, on Apr. 4 was appointed sales engineer of Vega Airplane Co., Burbank, Cal. The appointment to the newly created position was announced by Thomas H. Corpe, general

sales manager.

Hausman, 31, joined Lockheed as an engineer in July 1937. In Jan. 1938 he was transferred to the LAN control office. At Vega he will be in charge of contracts and the execution and administration of the company's various component parts activities.

His place in the Lockheed corporation will be taken by Joseph W. Shigley, who is present head of the dispatching department. Shigley has been with Lockheed for four years.



ONE of the symbols of air transportation's closeness to the needs of the people is "The Owl"—the after-midnight departure. It suggests the termination of a day of frequent schedules, schedules at regular intervals, schedules "on the hour" or "on the half hour"; and then the "Owl's" leisurely "clean-up" after the rush is over. It suggests a close knit community where folks go where they want to go when they want to go. It suggests an America brought so closely together by air travel that its far-flung cities are "neighbors" in the real sense of the word—a function the industry may well be proud to perform.

AMERICAN AIRLINES Inc.

ROUTE OF THE FLAGSHIPS

The Meyrs Trainer



Two views of the 2-place Meyrs OTW trainer delivered in February to the Alabama Institute of Aeronautics at Tuscaloosa for advanced training of students under the Civilian Pilot Training Program. It was made by the Meyrs Aircraft Company of Tecumseh, Mich., and is powered with a 125 hp. Warner Scarab. Of all-metal fuselage, the trainer has a cruising speed of 105 mph. and maximum speed of 120 mph. Landing speed is 40 mph. and it climbs at 1200 feet per minute.

Beck's Lightplane Assn. Short-Lived; Mfrs. Swoon When They Hear Budget

The plan advanced by Thomas H. Beck, president of Crowell-Collier Publishing Co. for a private airplane manufacturers association to engage in promotional, sales and advertising activities for lightplane concerns, came to naught following a second meeting of the manufacturers at Pittsburgh on March 31.

Some of the companies were interested in such an association until Beck presented his proposals in detail during a two and a half hour presentation featured by distribution of an elaborate brochure replete with maps, market survey data and charts. The idea blew up fast when Beck gave his suggested budget as \$157,000 for the first year including an executive director at \$8,000, secretarial and travel expenses as \$17,000 and advertising \$132,000. This budget was so far beyond the means of lightplane manufacturers that it didn't take long for the private airplane manufacturers association to dissipate into thin air.

In a 10-minute talk following Beck's presentation, Col. John H. Jouett, president of the Aeronautical Chamber of Commerce, pointed out that all of the manufacturers represented at the meeting paid only \$6,000 a year into the chamber and had the advantages of technical and export departments, legal aid, and a complete industrial organization to represent them in many matters.

By unanimous vote the manufacturers decided to form a committee autonomous within the chamber to include all manufacturers selling planes of \$4,000 and under. Vincent Ford, of the chamber staff, was designated as liaison between the chamber and the committee. The committee will represent the lightplane group on all mutual matters except technical and export problems which are already being handled by the chamber's departments.

TWA Promotes Randall as Asst. to Chairman

Appointment of I. S. "Stick" Randall, eastern region manager of TWA, as assistant to the chairman of the board was announced on Apr. 1 by Chairman T. B. Wilson.



Randall

Appointment was effective immediately and Randall will retain his headquarters in New York. No successor to his former position, which he had held since July 1938, has been named. Before joining TWA, Randall was account executive with Blackman Advertising Agency and prior to that was a sales executive of General Foods. He is president of the U. S. Aviation Exhibit at the New York World's Fair, vice-president and past president of the New York Sales Executive Club and past commander of the American Legion Post at Augusta, Me., his home town.

He served during the World War with the first division, ending his service with the rank of captain.

3 Harlows Sold

Inter-Continent Corp. has negotiated purchase of three Harlow Aircraft Co. cabin planes from the Alhambra, Cal., firm. The order may total more than \$30,000. With demonstrator-pilots, two of the craft will be sent to South America, it was understood, and one to the Orient, in preparation for a sales campaign.

Safety Board, PFA Differ on Proper Method of Reducing Accident Rate

ASB Favors 'Built-in' Safety, Spin-Proof Plane; Brinckerhoff Urges Teaching Pilots to Fly 'Right' in Present Ships

A spirited controversy has developed over the past few weeks between the Air Safety Board and the Private Fliers Association concerning the proper method of reducing the private flying accident rate.

Statement by Tom Hardin, ASB chairman on Mar. 6 that the CAA may take definite action in the near future to encourage "built-in" safety features in future planes for private fliers was followed by comment of William Brinckerhoff, secretary-treasurer of the PFA, that the first goal should be to teach new and present fliers how not to stall or spin in aircraft already in use and production.

While the ASB recognizes the value of controlled flight instruction, the more basic approach to private flying safety is to provide planes "inherently simpler to operate and safer to fly than conventional present-day aircraft, the characteristics of which are so largely responsible for the deplorable casualty rate in all non-airline flying," Hardin stated. He added that it is now possible to build a plane inherently spin-proof and devoid of disastrous stalling characteristics.

Brinckerhoff, however, in the PFA's March bulletin pointed out that of the 13,000 aircraft now in civil hands, virtually none is equipped with slots and flaps. First requisite for safety is to teach new students "on these ships how not to stall or spin, or . . . teach the danger of stall at altitude too low to recover," Brinckerhoff said. Second requisite is to educate current certificated pilots on stall and other flying characteristics of present aircraft, and the next requisite may be a spin-proof plane with improved stall characteristics, he stated.

"The man who asks for a 'stall-proof' airplane should have his head examined," said the PFA official. "A stall-proof heavier-than-air machine will never be built, but plenty of ships are built today whose stall does not require a rapid and uncontrollable dive to recover flying speed. If the Safety Board wants safety, and don't we all, let it begin with what we have, not make the same mistake made by others—begin by damning the existing ships."

At the same time as students and certificated pilots are being taught to fly "right," safer airplanes can be developed, Brinckerhoff explained. "Certainly, the accident record is disgraceful," he said. "We have said so for years. But for the love of Chapter 60, let's quit this periodic hysterical blaming of airplanes when the blame belongs to us—as pilots. Let's do it now—or quit flying until someone pulls the rabbit out of the hat. And let's not so over-emphasize stall and spin fatalities that we scare the living daylight out of the lay public by convincing them that private flying is 10 times more dangerous than it really is. It is still a fact that flying modern airplanes in accordance with CAA regulations as taught by competent instructors is safer than average motoring."

Following the bulletin, Louis Inwood, acting executive officer of the ASB, in a letter to AMERICAN AVIATION DAILY on Mar. 29 stated, in part: "The last few years' production of private airplanes is a fair example of the lack of progress toward greater inherent safety. The majority of planes built for private use still fail to show improved built-in safety features, the lack

of which has contributed to the high accident ratio. A large number of this year's production, while dolled up with automobile instrument panel boards and improved upholstery, still have the same dangerous flying characteristics of several years ago.

"With definite knowledge available to the manufacturers on how to eliminate the highly undesirable stall characteristics and spins, it does seem reasonable that when the failure to adopt these necessary features jeopardizes the proper growth of the industry, we should at least exert strong moral suasion to improve private aircraft. As a matter of fact, serious consideration is being given to means of improving the safe flying qualities of the existing aircraft. In most cases it is believed that changes could be made which would not involve considerable financial outlay but would greatly improve both the stall characteristics and the tendency to spin present in existing equipment.

"With approximately a 4,200% differential in safety between the strictly controlled airline and the private aviation field, it seems reasonable that the Air Safety Board should, and it has, made definite recommendations to lessen this wide disparity.

"The Air Safety Board does not believe that it would be desirable to subject private flying to more meticulous and more complicated regulation. A little bit of careful thought in the design and construction of airplanes requiring less skill and judgment on the part of the pilot in their operation will not only eliminate a large share of the present-day accidents but also make the private airplane more salable and attractive to a larger number of people. While the majority of people desire to fly, they do not care to go back to school to learn how safely to handle a plane with all of the present undesirable flight characteristics.

"By way of illustration, it might be brought out that it is perfectly possible through long and arduous training to teach a person to walk a wire stretched between the roofs of two high buildings over a city street in New York in comparative safety, but for the general public we recommend the sidewalk."

In a letter to Inwood on Apr. 2, Brinckerhoff stated his belief that, in general, the ASB and the PFA agreed, but that "the point at which we begin to disagree, if there is any disagreement, is on the question of what should be done first and also on the question of how it should be done . . . PFA holds that an attempt to improve the safety record should begin, not with what we may have a year or two years from now, but with what we have right here with us today."

Referring to Inwood's letter to AMERICAN AVIATION DAILY, Brinckerhoff said, "Let's, by all means, put the bee on the manufacturers. Why not try doing it by the method that the private flying development division has used in order to secure adoption of a better instruction procedure—by offering an inducement, rather than using the 'big stick.'"

B-M Buys Braniff Ships

Boston Maine Airways Inc. has purchased two Lockheed Electra transports from Braniff Airways. One was delivered Feb. 23; the other was delivered on Apr. 1.

Planners of Southwest Conference at Tulsa April 25-27



1. Moss Patterson, permanent president of the Southwest Aviation Conference, pilot and bus company owner, of Oklahoma City. 2. W. G. Skelly, chairman of the speaker's committee, president of Skelly Oil Co. and Spartan Aircraft Co., leader in the petroleum industry in the southwest. 3. Gerald H. Westby, general chairman, president of Seismograph Service Corp., a pilot and whose companies use seven planes. 4. Russell Cantwell, member of the executive committee, hard-working secretary of the Tulsa Chamber of Commerce.

5. W. G. Green, chairman of the program committee, president of Engineering Laboratories, Inc. and Well Surveys, Inc., an active pilot. 6. Fred Cooper, chairman of the finance committee, well known oil equipment manufacturer, uses airplanes extensively in business. 7. Stanley J. Ehlinger, chairman of information and publicity committee, president of the well known southwestern advertising agency bearing his name, a flyer for over ten years. 8. Co-chairmen of the ladies activities, left to right, Mrs. E. M. Wyatt of the Tulsa WNAA chapter, Dorothy McBirney, of the '99's, and Mrs. William B. Perry, president of the Tulsa Airwoman.

9. Members of the executive committee in charge of arrangements. First row, left to right: W. G. Green, shown elsewhere; Mrs. Wm. B. Perry, Mrs. E. M. Wyatt and Dorothy McBirney, shown elsewhere; and Gerald H. Westby, shown above. Standing left to right: Wade C. Whiteside, member of the reception committee; Russell Cantwell, shown above; H. C. Duncan, American Airlines, member of reception committee; H. M. Cosgrove, member of finance committee; Mather Eakes, well known aviation editor of the TULSA WORLD, member of publicity committee; Ted Law, chairman of reception committee; Stanley J. Ehlinger, shown elsewhere; H. L. Smith, chairman of entertainment committee, and Fred Q. Casler, chairman of registration committee.

Aeronautical Charts

New editions of aeronautical charts are now available from the U. S. Coast and Geodetic Survey, Washington, D. C., and from recognized dealers at major airports. Pilots are warned not to use old charts when new editions are available.

Regional charts, a series of 17 scaled at 1:1,000,000, sell for 75c; direction finding charts, a series of six scaled at 1:2,000,000, sell for 75c; sectional charts, a series of 87 scaled at 1:500,000, sell for 40c each. On orders grossing \$10 or more, including assortments, there is a 33 1/3% discount.

New Edition of Regional

Aeronautical Chart

10-M. Mar. 1940. Size, 26x31". Located in latitude 38°-44' north and longitude 69°-78' west, an area of some 198,000 sq. mi. Includes changes in air navigation facilities.

New Edition of Direction Finding

Aeronautical Chart

26-DF. June 1940. Size, 29x32". Located in latitude 25°-39' north and longitude 75°-91' west, covering an area of about 950,000 sq. mi. Civil airways added, together with an accumulation of changes since last edition.

New Editions of Sectional Aeronautical Charts

CLEVELAND. Mar. 1940. Size, 20x42". Located in latitude 40°-42' north and longitude 78°-84' west, covering an area of about 51,000 sq. mi. New radio range at Patterson Field, realignment of Pittsburgh radio range and accumulation of other changes.

DENVER. Mar. 1940. Size, 20x43". Located in latitude 38°-40' north and longitude 102°-108' west, an area of some 52,000 sq. mi. Gives radio range realignment at Pueblo, together with accumulation of other changes.

NEW YORK. Mar. 1940. Size, 20x42". Located in latitude 40°-42' north and longitude 72°-78' west, embracing some 51,000 sq. mi. Shows new radio range at Philadelphia, radio ranges realigned at Hackensack, Allentown and Harrisburg and revised civil airways.

NORFOLK. Mar. 1940. Size, 23x37". Located in latitude 34°-38' north and longitude 75°-78' west, an area of 34,000 sq. mi. Includes addition of radio range at Langley Field, revised civil airways and an accumulation of changes since the last edition.

Bob Ayer Gets Cessna

Late purchaser of a lemon-yellow, green-striped Cessna C-145 is Robert W. Ayer, manager of the technical division of the Aeronautical Chamber of Commerce. Though obtained primarily for pleasure jaunts, the Cessna probably will be used on business trips also, Ayer reports. Seller of the craft is Ollie Davis of Atlantic Aviation Sales Inc., Roosevelt Field, N. Y., who used the Cessna as a demonstrator.

McLaughlin Gets Philly Job

Mayor Lamberton of Philadelphia recently appointed Martin J. McLaughlin to a new \$6,000-a-year job as engineer in charge of construction at S. Davis Wilson Airport, the city's municipal field. Predicting the airport will be ready for use by June 15, Lamberton said he had "several men in mind" for the job of airport manager, which will pay \$4,200 a year.

SPA'S SAFETY RECORD

Warrington Calls Attention to 40,750,000 Accident-Free Miles at End of Cruise

Private aviation is possible "in and over a wide sphere with safety." Chester Warrington, secretary of the Sportsman Pilots Association, said recently in New Orleans at a meeting of the organization, marking the end of its sixth annual winter cruise. "After the members fly home from New Orleans, the association will have completed in 13 similar cruises 40,750,000 flying miles and no member has even broken a finger nail," he said.

SPA members flew into New Orleans under contest regulations. Harrison Somerville, Washington, D. C., was winner of the eastern wing flight, with A. D. Davis, Jacksonville, Fla., and J. L. Hamilton, Charlotte, N. C., tying for second. Dr. L. O. Wilkerson, Bryan, Tex., was western division winner, Mrs. Florence Boswell, Cincinnati, O., and Henry du Pont, Wilmington, Del., tying for second.

WISCONSIN AIR TOUR

Expect 75 Planes in 4th Cruise Aug. 11-17

J. B. King, NAA tour chairman, reports that 56 planes are already signed up for the fourth annual Wisconsin NAA air tour to be held this year Aug. 11-17. Fully 75 planes are expected this year and the number may reach 100. Last year there were 37 ships and 115 passengers.

Present plans call for starting the tour at Racine, and finishing at Milwaukee, covering most of the state. Final details will be worked out at the Wausau spring conference May 18. The tour is sponsored by the Wisconsin Department of NAA.

Conn. Observes Record

Hartford, Conn.—Not even a minor aircraft accident has occurred in Connecticut since Dec. 1939, observed State Aeronautics Commissioner Charles L. Morris in a memorandum to all pilots in the state on Mar. 27, in which he congratulated them on their new safety record and urged them to continue to take particular precautions against spins and stalls.

New Prescott Airport

B. L. Rettig and J. B. Hostetler have acquired acreage two miles southwest of Prescott, Ariz., on U. S. Highway 67 for an airport. A hangar is planned for immediate construction.

C. A. A. ACTIONS

(Pilot Certificates, Letters of Authority, Publications, Miscellaneous. For Airline Regulation, See Air Carrier Record. Serial Numbers of Orders and Dates in Parentheses.)

Pilots

Suspensions

James M. Wickham, Wichita, Kan., private pilot certificate 39146 suspended for a period of 60 days for piloting an aircraft with a person aboard who occupied a control seat of said aircraft without the dual controls thereof having been made inoperative although said person was not possessed of a pilot certificate valid for the operation involved, and other violations of the Civil Air Regulations. (Mar. 19, 438).

Revocations

Theodore Boschma, Coldwater, Mich., student pilot certificate 91806 revoked for making a solo flight on a civil airway although at such time his instructor had not certified that he was competent to make such flight.

Referred to Dept. of Justice

The following cases (Mar. 29, 452) were referred to the Attorney General for judicial action on violations of the CAR: L. L. Hobbs, Houston, Tex., for authorizing the flight of his registered aircraft on a civil airway when said aircraft was not certificated as airworthy; Dorothy C. Lemon, West Palm Beach, Fla., for giving flight instruction without being possessed of a valid instructor rating. Also (Mar. 19, 439), Carl L. Washburn, Graham, Tex., for piloting an aircraft on a civil airway without being possessed of a pilot certificate, in violation of the CAR.

Civil Penalties

The following orders in compromise of civil penalties incurred for certain violations of the Civil Aeronautics Act and the CAR were accepted by the CAA: (Mar. 22, 437), Raymond B. McClain, Indianapolis Ind., for piloting an aircraft acrobatically over an airport at an altitude of less than 1,500 ft. without being equipped with a parachute, \$50.00, and (Mar. 26, 449), Ellsworth Brandenburg, Compton, Cal., for piloting an aircraft on a civil airway carrying a person other than a certificated instructor actually giving instruction, although said aircraft was of a weight and engine classification other than as specified in his private pilot certificate, \$25.00; Lyle R. Hincks, Flint, Mich., for piloting an aircraft on a civil airway in weather conditions below those prescribed for contact flight within control zones without being possessed of an instrument rating and when said aircraft was not equipped for instrument flight, \$25.00.

Army Mfrs. to Furnish Production Figures on Request of Exchange

The New York Stock Exchange has announced that the War Dept. has authorized all aircraft manufacturers having Army contracts to furnish the exchange, upon request, the following information:

1. Backlog of unfilled orders at beginning and end of a given period.
2. New business booked during a given period.
3. Shipments or sales during a given period.

The War Dept. notice permitting issuance of such figures is thought to have asked that manufacturers release data for their total business, and not subdivided into Army, Navy, commercial or export.

The exchange's letter to manufacturers said the exchange "feels that it is particularly desirable to extend the amount of authoritative information available with respect to the financial status of the aircraft manufacturing companies, whose securities are outstanding in the hands of the public."

"Because of the character of the industry and the nature of its business, earnings reports alone, particularly those covering short periods of time, contain certain limitations and it therefore seems desirable for all companies in this industry to follow the practice now followed in whole or in part by most of the listed companies of releasing supplemental data in the form described above."

The exchange asked manufacturers to include backlog figures for beginning and end of 1939 fiscal year, and hereafter make public figures covering interim periods during the year, every three or four months. The exchange announced it believes all of the manufacturers appealed to have tentatively indicated they will follow this plan.

Military Contracts Dept. for Republic

Organization of a military contracts division with C. Hart Miller as director and Mundy I. Peale as assistant director has been completed by Republic Aviation Corporation, Farmingdale, L. I. The division will handle all relations between the company and the armed services.

Miller, a former Army flyer, has been engineering assistant to the president, and Peale was assistant director of the export division prior to the change. The new division will supervise execution of



Miller

Peale

Republic's \$4,900,000 worth of contracts with the Army Air Corps for YP-43 and P-44 planes.

Miller served in the Air Corps from 1929 to 1931, learning to fly at March Field and Kelly Field. He joined Sikorsky Aircraft Corp., predecessor to Republic, in 1935. Peale completed the transport pilot's course at Boeing School of Aeronautics after graduation from University of Chicago, and became western factory representative for Sikorsky Aircraft in 1931, later being transferred to Hamilton Standard Propeller division of United Aircraft as service representative. He rejoined Sikorsky from 1936 to 1939 and joined Republic last fall.

Hovgard Joins Martin As Research Engineer

Paul E. Hovgard, veteran test pilot and engineer, has joined the Glenn L. Martin Company of Baltimore as chief research engineer, it has been announced by Glenn L. Martin, president.

John B. Wheatley, whose place Mr. Hovgard fills, now assumes charge of the company's development work. Hovgard will work under W. K. "Ken" Ebel, Martin's chief engineer and chief test pilot.

Hovgard took his B.S. in mechanical engineering at Kansas State in 1925 and



Hovgard

Wheatley

joined Travelair. In 1927 he designed the ship that won the Dole Derby under the piloting of Art Goebel. He then went to Keystone as test pilot and engineer and tested Curtiss, Grumman and Loening ships, also becoming an expert in rotary-wing aircraft by flying the first gyroplane in the country made by E. Burke Wilford. Later he was chief engineer of Kellett Autogiro Co. and Pitcairn Autogiro Co. Prior to his joining the Martin company he was research engineer for Curtiss Aeroplane division of Curtiss-Wright at Buffalo.

Mr. Wheatley, who was made research engineer at Martin last December, was an engineer for the NACA at Langley Field and joined Douglas Aircraft Co. before going to Baltimore.

Barker Warns Against Freight Rate Increase

Stating the opposition of the Air Transport Association to a proposed freight rate increase for aeronautical products, Fowler W. Barker, ATA secretary, at a freight reclassification hearing in Chicago, Mar. 22, warned that the railroads will lose business rather than increase their income, if discriminatory revisions are placed into effect.

While describing the railroads' effort as a move to "cash in on a temporary boom in aircraft shipments," Barker declared that airplane manufacturers have on the drawing boards plans for cargo planes to haul the engines and aircraft parts which the transport companies are purchasing. Increase in freight rates, he promised, will not only expedite the construction of such specially designed cargo craft but also induce the airlines to fly planes to maintenance bases instead of shipping engines to the overhaul stations as is now sometimes done.

At a previous meeting in New York, Mar. 18, it was pointed out that manufacturers have commitments on planes and engines at fixed delivery prices far into 1941, prices being based on present shipping rates. The airlines, Barker indicated, plan to purchase \$25,000,000 worth of aircraft and engines in the next two years.

POSTHUMOUS AWARD

Distinguished Flying Cross Awarded to Ensign Eoff for Heroism in Flight

The Distinguished Flying Cross was awarded, posthumously, to Ensign James H. Eoff, U. S. Naval Reserve, by Acting Secretary of the Navy Lewis Compton, by direction of President Roosevelt, the Navy announced on April 4. Award was made for service as set forth in the following citation:

"For heroism while participating in an aerial flight. As pilot of SB2U-1 on Aug. 31, 1939, while flying at an altitude of 3,000 ft., Ensign Eoff's plane experienced a complete engine failure. At the time, the terrain beneath him was such as to prevent a forced landing without probable severe injury or death to the occupants of the plane. He gave his radioman the opportunity of jumping. In attempting to do so, the latter's parachute fouled the structure of the airplane and he dangled beneath the fuselage.

"Declining to attempt to save his own life by jumping, Ensign Eoff remained at his station and made every effort to free his passenger by maneuvering the plane. His efforts were unsuccessful and the extra weight and drag of the man suspended from the airplane caused it to stall and crash to the earth with terrific force, killing him and his passenger."

Barrage Balloon Under Way

Akron, O.—Plans and specifications for a new and large barrage balloon are under way at Goodyear Zeppelin Corp. here, it was learned recently. Said to be the first American barrage balloon ever constructed, the craft can reach a height of about 6,000 ft., it was said. In tests it has reached 4,000 ft. Engineers are striving for stability in the air with the balloon.

LA Discourages Jobseekers

Los Angeles County's aircraft manufacturers recently issued emphatic warning that the California aviation industry offers no job opportunities to out-of-state applicants. After conferring with the chamber of commerce's aeronautics committee, they approved a public statement listing only two classifications open to qualified work seekers: Graduate aeronautical engineers and skilled craftsmen.

News in Pictures



Gill Robb Wilson, president of the National Aeronautic Association, boards a United plane at New York for his first coast-to-coast trip since assuming office. He flew to the regional planning conference at Seattle. (UAL Photo)



Lee Ya Ching, attractive Chinese aviatrix, is flying a Beechcraft about the country raising money for war relief. A full-fledged transport pilot, she soon leaves for an air tour of South America. (General Tire & Rubber Photo).



Andre Kostelanetz, concert orchestra leader, is the first autogiro flight passenger to fly from a ground airport to a roof-top airport. He flew on Eastern Air Lines' six-mile 'giro schedule from Camden Airport to the roof of the Philadelphia General Post Office. Shown above are, left to right: Joseph Gallagher, Phila. postmaster; Mr. Kostelanetz, and Capt. John Miller, EAL 'giro pilot. Kostelanetz has flown over 500,000 miles. (EAL Photo).

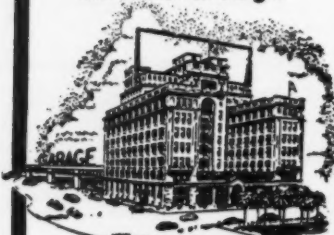


Another romance of the skies. This time it's Hostess Jane Elizabeth Merrill and First Officer William L. Mason, both of Penn-Central Airlines, who were married March 30 at Grand Rapids, Mich. After a Florida honeymoon the couple will live in Detroit. (PCA Photo).

Wind Tunnels Built by Vultee and Northrop

Two Los Angeles County aircraft manufacturers are building wind tunnels. One almost completed is being erected by Vultee Aircraft, Inc., Downey, capable of housing four-foot models and of speeds up to 200 mph. The second is being built by Northrop Aircraft, Inc. It will be a 150 mph, device capable of handling eight-foot models, approximating the size of the tunnel operated by the California Institute of Technology. The latter has been greatly overtaxed by demands of busy manufacturers. Vultee and Northrop will be the only west coast plants with their own tunnels.

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SUMMARY OF U. S. AIR TRANSPORT OPERATIONS FOR JANUARY

(Compiled and Mileage Costs Computed from CAA Reports ^a)

	Rev. Pass.	Rev. Pass.	Avail. Seat	Pass. Load	Pass.	Exp. & Frt.	Mail	Mail	Operating	Operating	Cost per b	Net Income	Total
	Miles	Miles	Miles	Factor	Revenue	Li.-Miles	Revenue	Revenue	Expenses	Expenses	Mile Ft.	(Before Inc. Taxes)	Assets
American	45,929	17,771,167	28,703,855	87.75%	\$873,926.19	133,279,986	376,973,328	\$318,373.62	\$1,252,074.26	\$1,171,483.98	\$6.22	\$74,610.13	\$9,942,850.27
Boston-Maine	1,430	230,546	653,080	28.30%	12,289.36	247,068	1,136,087	21,415.02	35,203.98	36,130.63	.49	1,006.11 (red)	344,382.90
Braniff	5,652	1,858,153	3,775,612	49.21%	83,621.48	6,745,438	43,039,730	65,560.21	154,658.35	174,819.19	.55	21,334.62 (red)	1,317,172.16
C & S	1,768	293,484	1,084,783	81.18%	30,910.33	4,030,746	18,064,038	35,684.60	88,786.56	73,773.73	.82	14,911.83	236,087.60
Continental	657	201,401	569,064	40.49%	8,187.60	396,085	3,520,027	27,514.61	26,015.24	27,712.92	.43	1,970.59 (red)	402,170.58
Delta	2,430	805,634	2,430,710	85.04%	613,370.98	72,134,785	214,233,390	148,336.13	806,012.35	636,041.83	.86	172,088.11	8,314,300.17
Eastern	548	133,962	710,280	18.86%	5,338.80	172,017	1,573,922	23,586.12	29,160.36	27,308.92	.49	8,114.46 (red)	320,586.93
Inland	2,077	295,526	461,317	84.93%	31,001.85	1,511,873	387,240	3,738.00	33,578.15	33,578.15	1.02	2,712.10	315,298.81
Inter-Island	31	7,748	45,996	16.84%	378.81	1,009,522	8,112.132	38,234.74	31,680.98	31,680.98	1.59	14,004.53 (red)	82,040.99
Marquette	1,193	300,217	1,008,530	29.80%	12,735.32	13,742.35	4,568,627	20,026.40	38,590.24	29,828.14	.40	6,164.38	460,902.58
Mid-Continent	1,499	332,811	719,170	46.53%	95,781.07	16,139,725	99,440,353	146,757.17	248,958.27	280,276.49	.60	30,929.58 (red)	2,845,783.88
National	8,856	2,464,304	7,575,113	32.53%	130,740.80	9,114,279	21,215,484	47,840.95	158,153.41	174,306.74	.88	18,426.89 (red)	2,032,886.81
Northwest	10,494	1,829,384	4,241,789	43.13%	106,130.80	9,114,279	269,745,487	196,759.68	389,405.62	697,489.09	.88	134,108.11 (red)	6,849,787.54
Penn-Central	14,836	6,933,170	16,985,433	40.82%	344,929.91	64,171,232	434,456,829	309,925.02	852,252.88	1,014,630.63	.86	170,939.27 (red)	24,141,848.99
TWA	19,132	6,583,198	20,267,184	47.78%	487,546.56	138,883,100	33,007,686	63,018.40	104,500.49	106,618.72	.61	2,008.15 (red)	1,121,023.74
United Air Lines	2,076	729,709	2,081,804	38.58%	28,203.45	12,532,945	1,573,922	24,770	2,757.41	7,833.14	2.12	8,078.73 (red)	184,312.35
Western Air	525	15,750	35,310	43.80%	2,645.00	244,770							
Wilmington Catalina													

^a All monthly reports to the CAA are subject to revision and year-end adjustment.
^b Total operating expenses divided by total plane miles; computed to the nearest half-cent.

WESTERN ASSN. MARKS 2nd YEAR

Aircraft Traffic Group Operates as a Mutual, Non-Profit Organization of Mfrs.

The Aircraft Traffic Association, located at 1031 S. Broadway, Los Angeles, Cal., recently completed two years of operation as a mutual, non-profit group of aircraft manufacturers "acting through their own central clearing house which is devoted to the problems peculiar to the western industry," according to Walter E. Perkins, executive secretary.

Among other factors, geographic location alone is one natural condition giving rise in many problems to regional peculiarities not duplicated elsewhere, it pointed out. "In order to coordinate the best efforts of mutual advantage and approach to the numerous problems affecting the industry, the association has successfully operated, ironing out various problems and amassing a vast amount of hitherto uncoordinated material in the industry. The success has been such that additional scope and work for the future is successfully viewed."

Purposes as formally stated in the association's agreement include (1) to enter into, make, perform and carry out contracts necessary to the purposes of the association; (2) to promote and maintain a mutual understanding between this and other bodies and associations of like character; (3) to study distribution, financing, insurance, credits and other branches of the freight forwarding and business; (4) to secure for its members the best possible freight rates, loading, assembling and warehousing rates, cartage rates, and for any and all other expenses or costs connected with shipment; (5) to secure and promote a proper understanding by and between members of the association and the railroads, steamship lines, and other carriers; (6) to provide for consolidation of freight shipments; to obtain lower rates; to get proper freight classification; and to promote and secure promptness, expedition, efficiency and economy in handling and movement of freight.

Members are Consolidated Aircraft Corp., Douglas Aircraft Co. Inc., Lockheed Aircraft Corp., North American Aviation Inc., Northrop Aircraft Inc., Ryan Aeronautical Co. and Vultee Aircraft Inc.

Sikorsky Resumes Experiments With Helicopter at Stratford

Igor I. Sikorsky, famed aircraft designer at Vought-Sikorsky Aircraft Div. of United Aircraft Corp., Stratford, Conn., has returned to his experiments with helicopters, this spring designing a craft with four rotors.

Sikorsky has discarded most of the features embodied in the helicopter which he constructed last summer in favor of a revolutionary craft with three single-bladed auxiliary tail rotors located in the rear of the plane where the tail section of the conventional airplane is customarily placed. Two of these smaller rotors are horizontal while the third is mounted vertically. All are powered by a series of belts and their gyroscopic action supplies longitudinal and lateral stability for the helicopter. The motor, located just behind the cockpit, is connected by direct shaft with the large main rotor which is located above and slightly to the rear of the pilot's seat, as in the former craft. It is this rotor which supplies the lift for the craft.

Mfrs. Get Notification of Govt.'s New Policy

Aircraft manufacturers were notified on Mar. 30 by Assistant Secretary of War Johnson of the government's new policy of permitting them to accept foreign orders and defer delivery of planes ordered on contract by the U. S.

In the letter to 175 manufacturers, Johnson said:

"If manufacturers take advantage of foreign orders, then prior to release for sale abroad, manufacturers shall agree to accept change orders on existing War Dept. contracts. The government must be fully protected and any authorized delays must not interfere with the delivery of equipment for units immediately necessary for our defense needs."

"The release policy for foreign sale of our most modern designs will be liberalized to accomplish the foregoing, to further stimulate productive capacity and to insure improved types of planes for our forces. Each such case must be decided on its merits. Prior to the release of any of our designs for sale abroad, the manufacturer must negotiate with the War Dept. for such changes in those models which are under contract for the U. S. Army in order to insure that improved types of airplanes are delivered to the War Dept."

"No military secrets will be divulged or released to any foreign purchaser of military airplanes."

"Neither designs owned by the War Dept. nor manufacturer-owned designs over which the War Dept. has control, will be released for manufacture or detailed assembly abroad."

DOUGLAS COMMENTS

Says Concentration on Few Models Will Give Industry Better, Cheaper, Faster Planes

Commenting on the developments indicating an interest by foreign purchasers in a large number of a few advanced models to be built under license by several manufacturers, Donald W. Douglas, president of Douglas Aircraft Co. Inc., Santa Monica, Cal., on Apr. 1 said:

"Quantity production of airplanes under a program of coordination with the government of the U. S. and in co-operation with other manufacturers is one of the most important and significant developments in the history of the industry."

"Ability and opportunity to concentrate on a few advanced models incorporating the latest structural refinements and highest possible performance will give the aircraft industry, and through it our national defense, a great reserve of airplanes that can be built better, cheaper and faster than we have been able to build them in the past."

"World events have clearly demonstrated the importance of the airplane in the affairs and safety of nations. In the light of recent developments it is our duty to be a nation prepared and efficient to meet the challenge of the times."

Braniff Airways

Braniff Airways is the subject of a 16-page illustrated brochure being distributed by F. Eberstadt & Co. Inc., 39 Broadway, New York City, underwriters for the carriers impending stock sale.

SUBLETTING DISCUSSED

Lockheed and Douglas, Anticipating Huge Orders, Confer on a 'Farm Out' Policy

Los Angeles, Apr. 4.—In anticipation of huge orders (possibly as much as \$200,000,000) from France and Britain for bombardment and pursuit aircraft, Douglas Aircraft Co. Inc. and Lockheed Aircraft Corp., it was learned, have been conferring with other west coast manufacturers regarding a "farm out" policy for the gigantic contracts.

To preclude added design work and save weeks in engineering, all manufacturing information and assistance would be exchanged. Should Douglas get the Allied order for as many as 850 twin-engine attack-bombers, Boeing and Consolidated are expected to receive a possible 25% apiece of the sublet contract. Lockheed, which may receive an order for as many as 1,200 P-38 twin-engine interceptor pursuit ships, has been discussing a similar policy with Vultee Aircraft Inc.

Robbins and Kangas Resign Continental Aeronautic Posts

Hugh C. Robbins and A. E. Kangas late in March announced their resignation from executive positions with Continental Aeronautic Corp. of Burbank and Glendale, Cal., which recently sold its plant and physical assets to Lockheed Aircraft Corp.

Robbins was secretary and treasurer and a member of the board of directors. Kangas was auditor of the corporation.

Air Mail Pamphlet Published

Dr. Richard B. Wetherill, M.D., of Lafayette, Ind., has written a 10-page pamphlet entitled "The First Official Air Mail" which has been published and circulated by the Tippecanoe County Historical Association. It is claimed that Lafayette was the starting point for the transportation of the first official air mail ever sent in the U. S. The writing is reprinted from the *Indiana Magazine of History*, XXXV, No. 4, Dec. 1939.

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Financial Reports

AERONAUTICAL CORP. OF AMERICA

Net profit \$72,260 (\$1.02 each on 70,620.95 shares) against loss of \$43,557 in 1938. Sales of \$841,332 compared with 1938 figure of \$472,887. Bank loans had been reduced from \$85,000 on Dec. 31, 1938, to \$10,000 a year later.

Total of 537 planes delivered in 1939 compared with 311 in 1938, and sales in 1940 are expected to reach 1,100. Ground has been broken for a new plant at Middletown, O.

Other operations figures: Selling expenses \$53,787. Net profit on sales \$139,011. General & Administrative expenses \$50,662. Net operating profit \$88,348. Gross income \$90,892. Reserve for federal income taxes & contingencies \$14,986.

Balance sheet: assets \$256,022; Current assets \$183,485 (cash \$48,954; notes & accounts receivable \$9,733; inventories \$122,456; insurance \$1,477; due from employees \$684). Investments \$2,750. Fixed assets, less reserve, \$24,686. Middletown plant \$11,460. Deferred charges \$33,718. Current liabilities \$112,263. Capital stock: authorized 180,000 \$1-par shares; issued & outstanding 70,620. Surplus: contribution by Middletown Civic Assn. \$6,000; paid-in \$44,819; earned, since Oct. 15, 1939, \$22,319.

GLENN L. MARTIN CO.

Net income \$4,110,605 (against \$2,349,355 in 1938, \$1,144,858 in 1937) or \$73.75 a share. Backlog Jan. 1 was \$49,241,515 against \$13,903,006 year previous.

Income statement: Net sales \$24,169,468. Cost of goods sold \$18,840,929 (labor, materials, tools, etc., \$17,819,348; plant & equipment depreciation \$323,644; selling, administrative \$697,936). Profit from operations \$5,328,539. Income credits \$268,029 (cash discount on purchases \$60,072; commissions received \$70,936; reversal of provision made in 1938 for experimental & development costs—reserve no longer required \$100,000). Gross income \$5,596,569. Income charges \$498,963 (including \$398,737 excess costs of patrol boats, written off). Provision for federal & state income taxes \$987,000.

Balance sheet: Assets \$30,724,855. Current assets \$21,267,493 (cash \$5,346,862; accounts receivable \$1,748,198; inventories \$14,172,431, including \$12,192,896 work in process based on accumulated costs, & materials and supplies of \$1,979,534). Investments \$772,304, including \$204,517 cash surrender value of insurance on life of president, and investment in & advances to wholly-owned subsidiary, Stansbury Manor, \$567,787. Property, plant & equipment \$7,272,325 after \$1,568,043 depreciation (land \$550,595; buildings \$4,557,559; equipment \$3,732,211). Patents \$17,245 after amortization reserve of \$9,992. Deferred charges \$1,274,817 (including \$1,244,850 portion of engineering & tool costs). Other assets \$120,669.

Current liabilities: \$12,768, 657 (accounts payable \$1,060,836; advances received under terms of contracts \$10,017,603; wages \$217,582; accrued liabilities \$1,477,633). Capital stock: (authorized 1,500,000 \$1-par shares) outstanding 1,094,532 1/3 shares. Surplus: capital \$11,542,567; earned \$5,319,098.

"It is probable . . . that new demands for accelerated production will

be made in the near future." Mr. Martin's report states. "Should it prove necessary again to enlarge . . . facilities, it is believed such reserve facilities would constitute an important element in the defense plans of the U. S. & that this important point would be recognized by the government . . .

"For the present it is believed necessary & desirable . . . to continue giving primary attention to further development of military aircraft while keeping abreast of current commercial requirements, particularly commercial transport types for service over the ocean airways . . . The company is well prepared along these lines & is conducting at an accelerated rate its research, new design & construction program, utilizing advanced scientific developments, new materials (including plastics & improved veneers) . . .

"The company is giving constant study to the probable production requirements of the post-war market for aircraft. All indications point to the necessity of continuing the defensive forces in all countries and to the accelerated expansion of commercial airline networks throughout the world and that continued development in the art will require a steady replacement of existing equipment due to obsolescence . . ."

UNITED AIRCRAFT CORP.

Net income \$9,375,436, with sales of \$51,161,599 (consolidated figures), or \$3.53 a share (\$2.05 in 1938). Backlog at Dec. 31 was \$127,004,032, with substantial orders received subsequently. Net profit from operations \$11,133,161. Other income \$11,438,131. Other deductions \$150,363. Net income before provision for income taxes \$11,287,768. Federal & Canadian income taxes \$1,886,997. Minority proportion of profits of subsidiary corporation \$22,334.

Balance sheet figures show: total assets \$67,047,397 & total current assets \$53,071,459, with \$30,023,879 cash, U. S. bonds \$7,385,301, trade accounts receivable after reserve \$3,591,658, inventories \$11,904,826. Investments \$267,008, including \$250,000 for 20,000 shares of Pan American Airways Corp. having quoted market value of \$385,000. Fixed assets after \$6,226,069 reserves, \$12,980,866, with land & buildings \$8,467,458, machinery & tools & equipment \$8,952,337, plant & equipment under construction \$1,547,140 & abandoned plant at \$250,000. Deferred charges \$718,062.

Current liabilities of \$34,404,556 included accounts payable \$3,956,491, accrued wages & taxes \$1,729,788, accrued incentive compensation \$368,750, accrued federal & Canadian income taxes \$1,888,475, advances on sales contracts \$26,461,050. Deferred income \$5,500. Sundry reserves \$9,053. Minority interest in capital stock & surplus of subsidiary corporation \$98,504. Capital (authorized 3,000,000 \$5-par shares), issued & outstanding 2,652,302 shares or \$13,261,510; to be issued for shares of capital stock of United Aircraft & Transport Corp.: 4,389 shares of \$21,945. Surplus: paid-in \$10,791,214; earned \$8,455,113.

"To meet the increased demand, much of which is believed to be caused by transitory conditions, very substantial additions have been made to the

Portable Receiver



Lear Avia. Inc., Roosevelt Field, L. I., has announced the Tri-Power portable receiver, featuring choice of AC-DC or battery operation by merely flipping a switch. It can be used in the air or out-of-doors on its own batteries, or on any ordinary electrical outlet without battery wear. It has radio range plus commercial broadcast reception, phone jack for use on aircraft band, external terminal for connecting aircraft antenna, and battery life of 200 hours or more. It weighs 12½ lbs. complete.

plant of the engine division, and, in lesser degree, to the plants of the propeller & airplane divisions as well," the report, signed by Frederick B. Rent-schler, chairman, & Eugene Wilson, executive vice-president, announced. "With full knowledge on the part of the foreign purchasers, the cost of these additions is substantially covered in the selling prices of the product to be manufactured; and it is anticipated that, through means of special amortization and accelerated rates of depreciation, substantially all the plant additions will either be charged off the corporation's books at or before the completion of orders now on hand or will be covered by appropriate reserves. Thus, upon restoration of normal operating conditions, annual depreciation charges are expected to be little, if any, heavier than they were before the additions were made."

BENDIX AVIATION CORP.

Consolidated net income of \$4,485,971 compares with \$156,048 in 1938 (\$2.14 per common share against 7c). Backlog at Dec. 31: \$37,000,000.

Consolidated income account: Gross sales and other operating income less discounts, \$41,726,547; costs and expenses \$35,255,445; depreciation and amortization \$1,116,161. Net profit from operations \$5,354,940. Other income \$844,719. Gross income \$6,199,659. Other deductions \$846,680 (including interest \$98,446; contingencies \$311,644; idle plant, etc., \$165,581; expense on debenture issue \$82,500; loss on investments \$143,155; sundry charges \$45,353). Net income before federal and Canadian income taxes \$5,352,979. Provision for such taxes \$867,007. Earned surplus beginning of year \$1,272,318. Dividends paid \$3,146,412. Earned surplus end of year \$2,611,877.

Balance sheet: assets \$34,909,023. Current assets \$18,184,685 including cash \$3,429,658; trade notes \$5,296,991; inventories less \$872,944 reserves, \$9,458,034. Investments and advances \$4,164,005 (foreign subsidiary and affiliated companies not consolidated \$747,144; domestic affiliated companies \$870,643; idle plant \$2,169,614; trade acceptances not current \$39,657; sundry \$263,365; officers and employees notes and accounts \$73,580). Real estate and equipment, depreciated, \$11,906,308. Leaseholds and improvements \$15,192. Prepaid royalties, rent, etc., \$638,630. Patents, rights, goodwill, contracts, \$1.

Current liabilities \$5,426,134 (accounts payable \$2,020,945; customers deposits \$599,484; accounts accrued \$1,677,779; taxes \$1,127,944). Reserve for contingencies \$586,644. Capital stock (authorized 3,000,000 \$5-par shares) outstanding, 2,097,663 shares \$10,488,315; minority interest in capital stock and surplus \$39,742. Surplus: capital \$15,756,289; earned \$2,611,877.

Automotive sales gained 53% over 1939; aviation 27%. About 85% of gross revenue was from U. S. and Canadian customers, 15% directly from overseas. During the year all outstanding preferred and other minority interests in Pioneer Instrument Co. Inc., and Bendix Radio Corp. were purchased. Dissolved were Marshall Asbestos Corp., Chas. Cory Corp., Metropolitan Marine Service Co. Inc., Eclipse Textile Devices Inc., Bendix Research Corp., Bendix Aviation Export Corp., W. F. Hilliard Co. Inc., Jenkins and Adair Inc., Radio Products Co., New Jersey Instrument Co. Inc.

Shortwave Broadcasts

For the second year shortwave station WRUL, the World Wide Broadcasting Foundation, University Club, Boston, is broadcasting a series of lectures on the elements of aviation by Capt. Hilding N. Carlson, instructor at Boston University. The broadcasts take place on Friday evening at 8 p. m. EST on a frequency of 6.04 and 11.79 megacycles, and are repeated by transcription on Saturday afternoons at 5:30 p. m. EST on the same frequencies. A booklet is sold for \$1 to be used during the lectures. The station reports increasing interest in the lectures from foreign countries, especially Canada and Latin America.

GRUMMAN AIRCRAFT ENGINEERING CORP.

Net income \$892,063 after charges. Sales \$4,482,350; cost of sales on completed orders \$3,364,066; accrued loss on Navy contract in progress \$15,629, bringing net profit from operations to \$1,102,654. Other income \$13,569. Income deductions \$12,579. No experimental or development costs were capitalized or deferred. Backlog at Mar. 1 was \$6,000,000.

Balance sheet: Assets \$2,846,112; current \$2,234,293. Current assets include cash \$314,020; accounts receivable \$388,514 (including trade accounts \$384,760); inventories \$1,031,718 (raw materials \$317,519; small tools and supplies \$4,906; contracts and orders in progress \$709,293 after accrued loss of \$15,629 on contract in progress and after billings on account of \$602,663). Fixed assets \$591,971 after \$83,070 depreciation. Deferred charges \$9,995. Association membership \$1,000. Security \$8,851. Patents \$1.

Current liabilities \$832,663 (accounts payable \$133,933; accrued liabilities \$270,333; deposits of contracts \$428,396). Orders in progress with billings over accumulated costs \$58,975 after deducting \$386,727 for labor, material and expense. Capital stock: authorized 600,000 \$1-par shares; issued 481,060. Surplus: capital \$726,340; earned \$747,073.

Company paid \$1.05 per share dividends in 1939. Income in 1938 was \$617,074; in 1937 \$139,061. Gross sales were \$4,904,945 in 1938; \$2,284,764 in 1937.

Exports

(Continued from page 1)

United Kingdom 19 for \$1,649,200, Finland 27 for \$1,495,908 and Canada 11 for \$1,112,811.

February exports consisted of 170 powered land planes valued at \$14,522,442; 10 land planes minus engines, \$896,240; 285 engines, \$2,541,415; parachutes and parts, \$88,252; engine parts and accessories, \$717,525; instruments and parts, \$391,275; propellers and parts, \$587,783, and other parts and accessories, \$854,771.

List of the 28 importers of aeronautic products totaling more than \$10,000 in February follows:

France	\$ 8,121,029
Australia	3,520,758
United Kingdom	2,529,754
Finland	1,748,299
Canada	1,311,991
China	536,916
Sweden	482,963
Netherlands Indies	408,730
Turkey	369,921
Norway	368,586
Netherlands	206,240
Brazil	161,867
Argentina	101,342
Union of So. Africa	95,071
Hong Kong	93,065
U. S. S. R.	86,452
Mexico	81,786
Yugoslavia	75,803
Japan	54,684
Burma	41,866
Peru	28,886
Philippine Islands	25,483
Greece	22,838
Portugal	16,993
Belgium	16,449
Chile	16,057
Latvia	14,371
Venezuela	12,420

Advertisement

YOUNG PLANE BUILDERS

As engineers and mechanics these young men are helping build some of America's most famous planes. Typical of the spirit of youth in Aviation, they are also typical of Aero ITI-trained men. Superbly trained in the industry's own production, maintenance, and engineering methods, most Aero ITI graduates have stepped directly into jobs after completing their training.

For information on this training . . . that produces men so readily accepted by the industry, write: Aero Industries Technical Institute, 5238 W. San Fernando Road, Los Angeles, Calif.



Backlogs, Total Employees, Payrolls, Work Shifts and Building Areas of Aircraft Manufacturers

(Compiled from Company Replies to Questionnaire by American Aviation)

Company & Date Information Received	Approx. Backlog	Year Ago	Total Employees	Year Ago	Approx. Monthly Payroll	No. of Work Shifts	Building Area (Sq. ft.)	Separate Plants	Total Buildings
Aerocraft (2-6)									
Beach (1-29)	\$1,304,800		818	250	\$80,000	2	50,000	1	2
Boeing (2-19)	7,500,000		1,150	1,000	\$3,333	2	125,000	1	2
Bellanca (2-19)	250,000	990,500	140	140	14,000	1	210,000	1	4
Brewster (2-6)			6,100	3,000			765,000	3	
Cessna (2-9)			1,500	900	160,000	2	188,000	1	1
Curtiss (2-7)			21	41	2,500	1	85,000	1	1
Curtiss Aeroplane (3-1)			5,000	3,500		3	885,000	1	7
Douglas (2-20)	97,287,721	22,000,000	15,702	6,350	1,900,000	3	1,306,800	2	1
Fairchild (3-11)	1,008,000	50,000	463	197	50,000	1	85,000		1
Fleetwings (1-30)	700,000		73		56,000	1	35,000		2
Harlow (2-3)			175	115	25,000	2	30,000	1	3
Kellett Autogiro (2-13)	250,000	260,000	7,000	3,000	1,000,000	2	688,000	3	83
Lockheed (2-2)	60,000,000	33,330,000	176	130	17,700	1	118,000		8
Luscombe (2-7)			11,700	3,800	1,300,000	3	1,050,000	1	1
G. L. Martin (1-25)	48,700,000	13,900,000	23	25	3,000	1	36,000	1	2
Monocoupe (2-12)	51,000,000	29,000,000	8,023	2,460	850,000	1	720,000	1	3
Piper (1-28)			802	200	40,000	2	100,000	2	3
Porterfield (2-15)			45	20	8,000	1	33,000		2
Republic (2-8)	15,000,000	100,000	1,350	245	195,000	1	200,000		12
Ryan (2-15)	1,562,000	300,000	900	230	90,000	3	115,408	3	6
Spartan (2-1)			103	9,250		1	28,450		1
Stearman (2-7)			845	400			200,000		5
Stinson (3-16)			600	136	20,000	1	21,000	2	6
Taylorcraft (2-12)	36,880	17,208	190	15	15,000	1	55,000		13
Timm Aircraft (2-6)	60,000		90		91,000	2	157,755	1	12
Waco (2-7)	1,068,000		745	120			170,000		5
Waco (1-31)			125	90			97,000		

Note: Blank spaces indicate data not given by companies. To date no information has been received from Barkley-Grow, Consolidated, Northrop, Rarwin, and Voight-Sikorsky.
* Ryan Aeronautical figures include Ryan School of Aeronautics.

GOVERNMENT CONTRACTS

(Awards of \$10,000 and Over)

Release Date Shown

ENGINES, PARTS, ACCESSORIES

Bendix Products Div., Bendix Aviation Corp., South Bend, Ind., 3/23, fuel tank pressure control units, \$23,250 (Navy).
Sperry Gyroscope Co. Inc., Brooklyn, N. Y., 3/26, recording theodolite, \$17,400 (Air Corps).
Flex-O-Tube Co., Detroit, Mich., 3/26, automatic pilot flexible hose assemblies, \$10,223.44 (Air Corps).
Curtiss Aeroplane Div., Curtiss-Wright Corp., Buffalo, N. Y., 3/26, parts for airplanes, \$88,265.18 (Navy).
Pratt & Whitney Aircraft Div., United Aircraft Corp., E. Hartford, Conn., 3/28, aircraft engines, \$696,881.60 (Navy).
Switlick Parachute & Equipment Co., Trenton, N. J., 3/28, parachutes, \$40,400 (Navy).
Bausch & Lomb Optical Co., Rochester, N. Y., 3/29, octants, \$112,350 (Air Corps).
Fairchild Aviation Corp., Jamaica, N. Y., 4/3, camera mount, \$27,160 (Air Corps).
Fairchild Aviation Corp., Jamaica, N. Y., 4/3, aircraft cameras & cone assemblies, \$10,626.48 (Air Corps).
Pratt & Whitney Div., United Aircraft Corp., 4/4, aircraft engines, \$245,569.02 (Navy).

MISCELLANEOUS

Sinclair Refining Co., New York, N. Y., 3/23, aviation gasoline & fuel oil, \$611,330 (Navy).
Air Associates Inc., Garden City, N. Y., 3/26, hydromatic propeller test stand assemblies, \$41,160 (Air Corps).
Aerial Machine & Tool Corp., New York, N. Y., 3/26, pilot's safety belt assemblies, \$11,880 (Air Corps).
Kendall Refining Co., Bradford, Pa., 3/26, aircraft engine lubricating oil, \$42,702.68 (Air Corps).
Humble Oil & Refining Co., Houston, Tex., 3/26, aircraft engine lubricating oil, \$18,325 (Air Corps).
Standard Oil Co. of California, San Francisco, Cal., 3/26, aircraft engine lubricating oil, \$35,341.35 (Air Corps).
MacWhitty Co., Kenosha, Wis., 3/28, tie rods, \$13,817.95 (Naval Aircraft Factory).
Merrillmead Div., Monsanto Chemical Co., Boston, Mass., 3/28, nitrocellulose dope, \$14,724.75 (Navy).
Grande & Volpe Inc., Malden, Mass., 3/28, completion of hangar at Naval Reserve Aviation Base, Squantum, Mass., \$203,000 (Yards & Docks).
Ingersoll-Rand Co., Cincinnati, O., 4/1, air compressors, \$34,744 (Air Corps).
Westinghouse Electric & Mfg. Co., Dayton, O., 4/1, rebuild electric motor, \$55,300 (Air Corps).
Yale & Towne Mfg. Co., Stamford, Conn., 4/1, fuel transfer pumps, \$19,100 (Air Corps).
John Rugo & Son Inc., Dorchester, Mass., 4/1, barracks & mess hall at Naval Reserve Aviation Base, Squantum, Mass., \$90,800 (Yards & Docks).
W. P. Thurston Co., Richmond, Va., 4/1, completion of hangar, Naval Station, Key West, Fla., \$189,000 (Yards & Docks).
M. H. Golden, San Diego, Cal., 4/2, bachelor officers' quarters, Naval Air Station, Alameda, Cal., \$37,880 (Yards & Docks).
Aqua Systems Inc., New York, N. Y., 4/2, gasoline storage & distribution system, Naval Air Station, Banana River, Fla., \$32,832 (Yards & Docks).
John E. Shriver, Cincinnati, O., 4/3, brake shoe grinders, \$11,616 (Air Corps).
Lite Mfg. Co., New York, N. Y., 4/3, field shelter bags, mattress, tent, \$19,500 (Air Corps).
C. R. Daniels Inc., New York, N. Y., 4/3, field shelter bags, mattress, tent, \$10,950 (Air Corps).
Goodyear Tire & Rubber Co. Inc., Akron, O., 4/3, balloon, blower, case, manifold assemblies, etc., \$13,341 (Air Corps).
Western Construction Co., Seattle, Wash., 4/4, personnel buildings, Naval Air Station, Tongue Point, Ore., \$279,350 (Yards & Docks).
Steel Products Engineering Co., Springfield, O., 3/21, special tools, \$11,944.80 (Air Corps).
International Flare-Signal Div., Kilgore Mfg. Co., Tripp City, O., 3/22, aircraft flares, \$13,331.50 (Ordnance).
National Fireworks, Inc., West Hanover, Mass., 3/22, aircraft flares, \$13,431 (Ordnance).
General Electric Co., Schenectady, N. Y., 3/22, electric motors, \$10,220 (NACA).
Air Cruisers, Inc., Clifton, N. J., 3/22, life preservers vests, \$67,480 (Air Corps).
Eclipse Aviation Div., Bendix Aviation Corp., Bendix, N. J., 3/22, data transmissions systems, \$428,223 (Ordnance).
E. A. Kinsey Co., Cincinnati, O., 3/22, universal horizontal shapers, \$55,976 (Air Corps).
H. G. Goeltz Co., Oak Park, Ill., 3/22, construction & completion of paving & drainage of runway, Chanute Field, Ill., \$265,050 (War).
Jacobsen Construction Co., Salt Lake City, Utah, 3/22, construction of buildings, Hill Field, Utah, \$71,513 (War).
Lord & Loryea, Portland, O., 3/22, steam distribution system, McChord Field, Wash., \$85,493 (War).
J. G. Roy & Sons Co., Springfield, Mass., 3/22, construction of photographic laboratory, Westover Field, Mass., \$37,781 (War).

New Catalog

Johnson Bronze Company, New Castle, Pa., has issued Catalogue 400 describing the complete line of sleeve bearings available.

New Corporation

Nova Aviation Corp. has been incorporated for \$50,000 in New York State.

Stock Holdings

Following is official summary of transactions and holdings of officers, directors and principal stockholders of corporations with equity securities registered, filed with the SEC Feb. 11 to 29. Unless otherwise indicated, transactions were made in January and holdings are as of the end of that month:

Air Associates Inc. common—Roland Palmado, director (Dec. 1939), acquired 100, holding that amount.

American Airlines Inc.—Thomas J. Dunnion, officer, holds 6 common and disposed of \$2,000 4 1/4% debentures in Dec. 1939 and \$3,000 in January, holding none.

Beech Aircraft Corp. common—John P. Gaty, officer, increased 1,600 to 6,600.

Bendix Aviation Corp. common—Paul H. Davis, director, holds 5 directly; in trust (property interest not shown) increased 500 to 1,200. General Motors Corp., beneficial owner, decreased 3,500 to 427,500.

Breeze Corps. Inc.—Joseph J. Maschuch, beneficial owner (Dec. 1939), gave away 10,700 common, leaving 76,718, and holds 57,292 warrants.

Brewster Aeronautical Corp.—Ralph M. Singer, officer and director, decreased 1,000 to 2,512.

Eastern Air Lines Inc. common—T. F. Armstrong, officer, increased 200 to 302.

Pan American Airways Corp. common—Harold McM. Bixby, officer, decreased 100 to 148.

Pennsylvania-Central Airlines—John L. Loeb, director, holds 2,000 capital shares directly, and holds 1,265 in trust; through C. M. Loeb Rhoades & Co. (property interest not shown) bought and sold 1,500, holding none. Ralph S. Richards, director, decreased capital shares 200 to 800, and holds 252 common warrants.

Western Air Express common—Alvin Philip Adams, officer and director, decreased 200 to 8,050. Thomas Wolfe, officer and director, decreased 250 in Dec. 1939 and 200 in Jan. 1940, holding 2,825.

Incorporations

Indiana—Aircraft Corp., La Porte; amendment increasing capital stock to 4,000 shares class B common having no par value and 6,000 shares class A common having no par value.

New Jersey—Ventnor Boat & Plane Co., Ventnor City; 500 shares, no par. Agent, Arno A. Apel.

New York—Dervend Flying School Inc., Mineola; to operate flying schools; J. A. Travis, 130 Clinton St., Brooklyn; \$10,000.

New York—Uniloy Accessories Corp., Lancaster; aircraft accessories; \$20,000. Julius Volker, White Bldg., Buffalo, N. Y.

Fairchild Backlog Up

Unfilled orders of Fairchild Aviation Corp., Jamaica, N. Y., were \$2,161,140 as of Feb. 29, 1940, compared with \$1,255,296 a year ago, representing an increase of 72%, and \$1,923,200 as of Dec. 31, 1939.



Speed —wide-open, full-throttle speed! "Stanavo" "speed-tests" more western planes than any other fuel. That's because "Stanavo" more than meets the requirements of today's most-advanced engines. It will get top performance from your plane, too.

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AVIATION STOCK COMMENTS

Chart Data Supplied by Wyckoff Associates Inc.
Comments by Philip P. Friedlander

With the general market displaying an impressive undertone that has not been witnessed since Sept. 1939 during the so-called first days of the war boom, and with aviation orders piling up at a terrific rate with promise of even bigger orders within a short period of time from the Allied nations, the action of the aviation manufacturing companies securities has been very disappointing.

Prominent advisory services are seeking reason for such market action. Standard Statistics service points out that "out-and-out war stocks in the World War seldom sold at more than three times the share earnings," and the general feeling is that aviation manufacturing companies' securities have about discounted the prospective big rise in profits.

The question then comes up, would it be more profitable at this point to sell aviation manufacturing companies' stocks, and switch to other securities that have not enjoyed such substantial appreciation? There is a doubt that a program of this sort would benefit the trader or the investor. Rather, it is more important to study the individual companies and to gauge future prospects.

What about the companies whose earnings are running small due to the few orders that they have received? The available factory space is in demand, and the logical thing is for the companies with terrific backlogs to make use of all facilities. The emergency and the need for quick execution of contracts means sub-letting of business. Thus, it is wise to study carefully those companies whose securities have failed to advance so much in price due to the relatively poorer showing in earnings. Once the distribution of orders occurs, better market performances in the so-called "sleepers" will be justified.

Again, selectivity carries over to the airline stocks. Certainly this group has

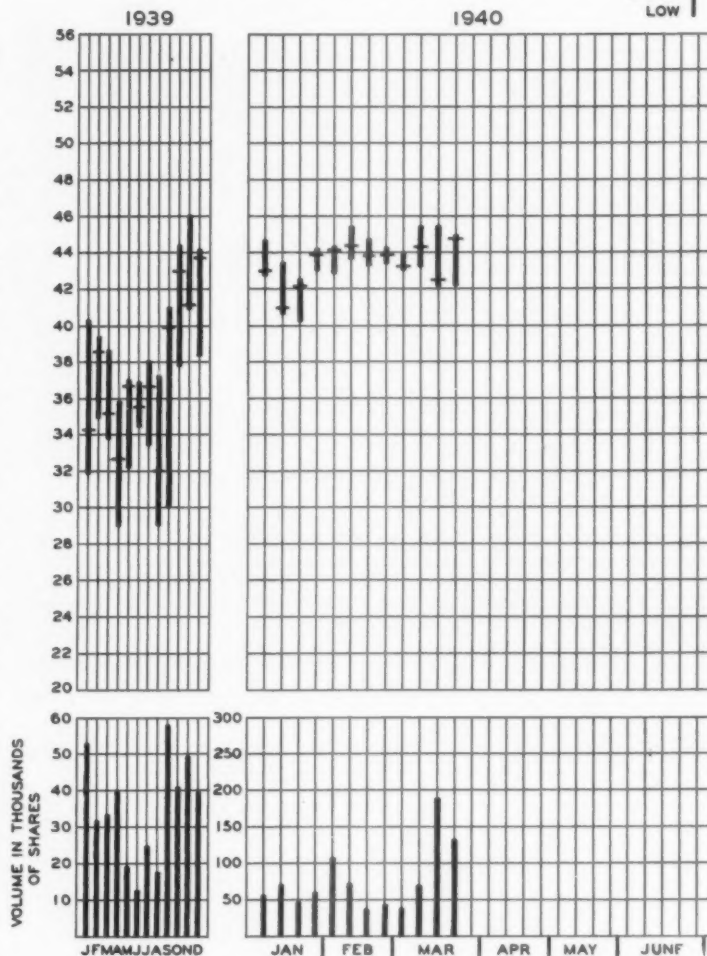
had a sensational move, and profit-taking seems, not the bravest, but the most sensible thing to do at this stage. Recently, the manufacturing companies' equities have failed to keep pace with the air-line stocks and switching might be profitable.

Turning now to a study of the chart on the averages of the aviation manufacturing companies, it is wise to note that during the period when peace talk seemed to dominate the thought in this country, the averages dipped to 42.09 during the week of Mar. 16, and the following week another test-out occurred, with the averages reaching a low of 42.13. Note even though the difference is small, the second reaction did not equal or go below the first reaction point. This is significant, and much importance could be attached to it if it were not for the fact that the highs of 45.37 established during the last two weeks seemed an obstacle too difficult to surmount. It is logical to feel that this maneuver served only to increase the foundation for a future move.

There is nothing strange in one group of stocks failing to move up while other groups seek higher levels. The aviations have flirted with the top of the range while the rest of the market went into lower grounds. Failure of the aviation stocks to go higher now may mean that they are resting while the general market is catching up with the aviation pace-making advance.

The phenomenon is not new, and technical students recognize the maneuver as an expression of the investor seeking securities selling "out-of-line." But the action of the aviation stocks suggest strongly that the real flare-up is not far away. A break through at 46 on sizeable volume cannot be ignored. The move should carry to 51 with a prospect of 54. At that point the action of the group will tell a better story of what lies ahead.

WEEKLY AVIATION AVERAGES



Airline Personnel

Two former stewards—Red Gragg and Clint Hummer—have joined United's passenger agent staff in Chicago. Gragg formerly was at Newark, Hummer at Cheyenne.

New master mechanic at Kansas City, Mo., for TWA is A. T. Stubbs, who was promoted from lead mechanic recently.

W. W. McCormick, who accompanied Adm. Richard E. Byrd as autogiro pilot on his second expedition to Little America, is now enrolled in American's pilot training school at LaGuardia Field, New York, preparing himself to become a first officer.

Clarence E. Christopherson has taken over the duties of shop superintendent for WAE at Union Air Terminal, Burbank, Cal.

Three Navy flyers and one Army flyer have become new co-pilots for United. From the Navy are W. L. Noffsinger, Charles R. Rushing and J. W. Blickensderfer. From the Army is R. A. Barksdale.

Arnold C. Lundberg, George V. Blackmore and John B. Hulburd are new TWA first officers based at Kansas City, Mo.

Changed status from junior agent to agent are the following American employees: Donald Davis, Buffalo; Robert Mahoney, Ft. Worth; Claude McClure, Boston; Joseph Greenough, New York City; Richmond Terry, Boston; Matthew Miller, Buffalo.

New employee of United's reservations department at Chicago is Walter Brandenburg.

New TWA employees at Kansas City, Mo., are Charles E. Meyers, Allan Fleming, Deborah Frye, Norman E. Fisher, K. V. Hake, D. E. Rice, Floyd C. Smith, John N. Borges, William L. Cox, Lewis W. Taylor, Clarence F. Heigelord, Benjamin I. Kelly, M. N. Kohler, Paul T. Houck and Marvin H. Karlson.

The following AA apprentice agents recently were promoted to junior agents: Robert Fay, Boston; Murray Spain, Tucson, Ariz.; Edward Cole Jr. and John Pell, New York City; James Williams and Benjamin Cooley, Washington; Leo Petersen, Chicago; Jack Ward, Nashville, Tenn.; and Robert J. Woods, Abilene, Tex.

"Buzz" Beley recently left United's Chicago operations department for Cheyenne, Wyo. He was replaced by "Larry" Krise.

P. B. McLeod, TWA station manager at Amarillo, Tex., transferred recently to Albuquerque, N. M., and M. B. Joyner, station manager in the New Mexico city, took over duties at Amarillo.

Recently transferred to United's station at Des Moines, Ia., were Al Evans from North Platte, Neb., and J. L. Turre from Cheyenne, Wyo.

American has promoted Hugh Boylan from agent to chief reservation agent at Boston. Edward Eidson has been changed from reservations supervisor to general supervisor in New York City. Thomas Mays was changed from supervisor of ticket delivery to reservations salesman at New York.

New United recruit at Salt Lake City is D. Frebairn. George Griffin, formerly of SLC, Rock Springs and Omaha, has returned to UAL's Salt Lake staff.

TWA has employed the following in New York City: C. S. Kessler, G. Kerley, S. J. Kolas, William J. Ahearn and R. F. Welti.

The following employees of American recently received a change in status: Benjamin Krederavage, Raymond McKittick, Raymond Brockel, Peter Montana, Francis Riley, Richard Baker, Gustav Maier, John Boddie and Harold Chumbley at New York City; Nicholas Marshall at Louisville, Ky.; and David Kneeland at Detroit.

Willie Stone recently left United's Sacramento, Cal., staff to serve the company at Burbank, Cal. His place was taken by Jack Williams from Pendleton, Ore.

A. A. Farrell has been employed by TWA in St. Louis as traffic representative.

Robert Warriner of American recently changed status from station chief operator at Burbank, Cal., to radio engineer at New York.

Additions to United's staff at western division headquarters, Oakland, Cal., are Hal Miner, transferred from Salt Lake City, and P. Webb and V. Collins.

A. R. Fundo at Pittsburgh and John P. Freeman at Chicago are new TWA employees.

NEW YORK CURB EXCHANGE

	Week Ended Mar. 30				Week Ended Apr. 6			
	High	Low	Net Change	Sales	High	Low	Net Change	Sales
Aero Supply B	59½	5	+ ¼	2,400	59½	5	....	1,900
Air Associates	12¼	11¾	+ ½	1,700	13	12¼	+ ¾	1,200
Air Investors	3	2½	+ ½	7,100	3¼	2¾	+ ½	4,200
Air Investors cv pf ..	29½	28	+ 1	200	30½	30	+ ½	400
Aviation & Transp.	4	3½	+ ½	9,700	4	3½	+ ½	4,000
Beech Aircraft	7¾	7	....	4,600	7¾	6¾	+ ¾	6,800
Bell Aircraft	31¾	25¾	+ 5¾	33,700	32	29½	+ ¼	22,600
Bellanca Aircraft	6¾	6½	+ ¼	1,800	7	6½	+ ¼	3,800
Breezer Corps	6½	5¾	+ ½	2,600	6	5½	+ ½	2,400
Brewster Aero	17½	15½	+ 1½	59,300	17½	16½	+ ½	24,800
Canadian Colonial	9¾	8¾	+ ½	10,600	9¾	8¾	+ ½	13,700
Fairchild Aviation	11	9¾	+ ¾	2,400	11¼	10¾	....	3,200
Fairchild Eng. & Air. ..	6	5	+ ½	34,000	6	5½	+ ½	13,500
Grumman Aircraft	18½	16½	+ 2	16,500	21½	18½	+ 2½	43,900
Irving Air Chute	16½	15¾	+ ¼	1,000	16	15½	+ ½	600
Penn-Central Airlines ..	18½	17	+ ¾	19,500	19½	17¾	+ 1¾	18,400
Republic Aviation	6¼	5¾	+ ½	20,700	6¾	6	+ ¾	38,900
Roosevelt Field	3½	3	....	200	2¾	2¼	+ ½	7,000
Waco Aircraft	4½	4½	+ ½	100	6¼	4¼	+ 1¾	2,000
Western Air Express	7	6½	+ ½	9,500	7¾	7	+ ¾	9,700

NEW YORK STOCK EXCHANGE

	Week Ended Mar. 30				Week Ended Apr. 6			
	High	Low	Net Change	Sales	High	Low	Net Change	Sales
American Airlines	64½	61	+ ¼	17,200	69½	62½	+ 6½	20,200
Aviation Corp.	7¼	6¾	+ ½	39,700	8	6¾	+ ¾	95,200
Bendix Aviation	35¼	33¼	+ ½	49,300	35¾	34¾	+ ½	32,800
Boeing Airplane	24	21½	+ 1	13,200	27¾	22½	+ 3½	60,900
Consolidated Aircraft ..	28½	26	+ 1½	9,400	30¾	27¼	+ 2¼	24,400
Continental Motors	4½	3¾	+ ½	19,600	4½	3¾	....	30,600
Curtiss-Wright	10¼	10½	+ ½	100,000	10¾	9¾	+ ½	96,100
Curtiss-Wright A	29¼	27¾	+ ½	53,400	28¾	27	+ ½	29,100
Douglas Aircraft	86½	82½	+ 2	11,700	88	83	+ 2½	29,100
Eastern Air Lines	38½	37	+ ½	13,700	41	38¼	+ 2¼	19,900
Ex-Cell-O	27½	25½	+ 1½	9,000	29	27¼	+ 1¾	8,600
Lockheed Aircraft	35½	30½	+ 4½	122,800	38¾	34	+ 2½	135,400
Glenn L. Martin	45½	42½	+ 1½	43,900	48¼	43¼	+ ½	45,300
Natl. Aviation Corp.	15½	14½	+ ½	40,900	15¾	14½	+ ¾	42,600
N. American Aviation ..	25½	23½	+ ½	30,600	25¾	23¾	+ ¾	51,500
Pan American Airways ..	22½	21	+ ¾	98,800	25¼	21½	+ 2½	108,300
Sperry Corp.	43¾	42¼	+ ¾	10,900	46½	42¾	+ 3¾	26,500
Thompson Products	35½	33½	+ 1½	6,000	36¾	34¾	+ ½	8,300
TWA	20	18¾	+ ¾	28,400	21½	19½	+ 1½	43,000
United Aircraft	48½	47	+ ½	22,700	50¼	47½	+ 2½	45,700
United Air Lines	21½	19½	+ ¾	100,700	23¾	20¾	+ 1¾	110,300
Wright Aeronautical ..	126	118½	+ 7½	910	127	119	+ 3	540

World's Fastest Climber - One Mile in a Minute



The first of a production order of Curtiss-Wright interceptor-fighter planes now being built by the St. Louis Airplane Division of Curtiss-Wright Corp. has completed flight tests. The first production ship climbed well over 5,000 feet in 60 seconds, proving that the interceptor is more effective than anti-aircraft batteries for combating high-flying bombers. It's a single-place all-metal monoplane powered by a Wright Cyclone engine delivering over 1,000 hp. As the photos show, it's really a "flying engine." It is completely streamlined, has retractable landing gear, and mounts four machine guns which are synchronized to fire through its propeller disc. In addition it offers provisions for radio communications and high altitude operations requiring the use of oxygen. It weighs only 4,250 pounds loaded and has a speed of over 300 mph.

Spartan's Cal. Distributor

H. Warren Holladay, sales manager of Spartan Aircraft Co., Tulsa, Okla., has announced appointment of Marshall Searle, Los Angeles, as Spartan distributor for the state of California.

Vultee's BC-3 Basic Combat



Delivery to the Air Corps at Wright Field late in March of the basic combat two-place airplane designated BC-3 and manufactured by Vultee Aircraft Inc. was announced late in March by the War Department. The ship is a single-engine low-wing monoplane of all-metal construction. The fuselage is constructed of welded steel tubes to the rear cockpit and monocoque tail sections rearward of the back cockpit. The sides of the fuselage are removable to facilitate examination and servicing of controls, instruments and equipment. Flush riveting is used on the exterior. The wing is equipped with full trailing edge flaps. Power is furnished by a Pratt & Whitney 9-cylinder engine. The propeller is three bladed, diameter being 10 feet. Approximate gross weight with normal load is 5865 pounds. Wing span is 42 feet, length of fuselage 29 feet, and height is 9 feet, 4 inches. (Air Corps Photo).

New Plant for Elastic Stop Nut



Ground has been broken on Vauxhall Road, Union, N. J., for the new plant of Elastic Stop Nut Corp., Elizabeth, N. J. The corporation, which will occupy the plant in the Newark suburb about June 1, will use the new space solely for the manufacture of self-locking nuts. General contractor is Austin Co., Cleveland.

Mfrs. Meet to Reduce Costs by Cooperation

Representatives of nine principal aircraft manufacturing companies of the east met recently at the plant of Republic Aviation Corp., Farmingdale, N. Y., to continue deliberations which are expected to lead to the establishment of new standardization methods in the industry.

This was the seventh regular meeting of the organization, the Eastern Aircraft Standards Committee, and was attended by engineering representatives of Curtiss Aeroplane Div., Glenn L. Martin Co., Brewster Aeronautical Corp., Kellett Autogiro Corp., Stinson Aircraft Div., Bell Aircraft Corp., Grumman Aircraft Engineering Corp., Vought-Sikorsky Div. and Republic Aviation Corp.

Eric Dudley of Curtiss Aeroplane, chairman of the group, said after the meeting that the committee had explored new avenues to reduce airplane costs and facilitate production by inter-company cooperation in the design and purchase of various fittings, rivets, bolts and similar parts.

Next meeting of the group was scheduled for April at Bell Aircraft in Buffalo, N. Y.

Continental Appoints 5 Authorized Stations

Continental Motors Corp., Muskegon, Mich., has announced the following new authorized Continental service stations: Luscombe Airplane Corp., Trenton, N. J.; John K. Hinson, Rutherford Field, Baltimore, Md.; Palm Beach Aero Corp., West Palm Beach, Fla.; Brayton Flying Service, Inc., Lambert-St. Louis Airport, Robertson, Mo.; and Paul Reimer, Aeropuerto Rancho Boyeros, Havana.

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ANOTHER **TWA** FLIGHT FOR *Spring!*

FOUR "TRANSCONTINENTALS" every day—each way—TWA! Shortest, fastest, between New York and California—shortest, fastest, between Chicago and California! Earliest morning arrival in New York from the Pacific Coast. **Through** Skysleepers—no change of planes. Scenic daylight flight over Boulder Dam, Grand Canyon, the Painted Desert.

MORE COMMUTER FLIGHTS From Pittsburgh to New York, fourteen flights daily with seven non-stops; seven flights Pittsburgh, Chicago, with five non-stops. Between Kansas City and Chicago, St. Louis and Kansas City, five non-stops a day, each way. From New York to Pittsburgh, fourteen flights daily, with six non-stops; Chicago to Pittsburgh, seven flights, with four non-stops. Philadelphia, Columbus, Dayton, Indianapolis, and St. Louis receive a new commuter schedule to Kansas City . . . all increasing TWA's famous "Commuter Service."

MORE CHICAGO-WASHINGTON-NEW YORK SERVICE New schedule provides early morning flight to New York, permitting full half business day with return before midnight. Provides new early-morning arrival (10:30 A. M.) in Washington—most frequent service, Chicago-Washington.

For Information, Reservations: Your Travel Agent or TWA Representatives in Your City

The **TRANSCONTINENTAL** *Line*
and Western Air, Inc.

AVIATION STOCK COMMENTS

Chart Data Supplied by Wyckoff Associates Inc.
Comments by Philip P. Friedlander

With the general market displaying an impressive undertone that has not been witnessed since Sept. 1939 during the so-called first days of the war boom, and with aviation orders piling up at a terrific rate with promise of even bigger orders within a short period of time from the Allied nations, the action of the aviation manufacturing companies securities has been very disappointing.

Prominent advisory services are seeking reason for such market action. Standard Statistics service points out that "out-and-out war stocks in the World War seldom sold at more than three times the share earnings," and the general feeling is that aviation manufacturing companies' securities have about discounted the prospective big rise in profits.

The question then comes up, would it be more profitable at this point to sell aviation manufacturing companies' stocks, and switch to other securities that have not enjoyed such substantial appreciation? There is a doubt that a program of this sort would benefit the trader or the investor. Rather, it is more important to study the individual companies and to gauge future prospects.

What about the companies whose earnings are running small due to the few orders that they have received? The available factory space is in demand, and the logical thing is for the companies with terrific backlogs to make use of all facilities. The emergency and the need for quick execution of contracts means sub-letting of business. Thus, it is wise to study carefully those companies whose securities have failed to advance so much in price due to the relatively poorer showing in earnings. Once the distribution of orders occurs, better market performances in the so-called "sleepers" will be justified.

Again, selectivity carries over to the airline stocks. Certainly this group has

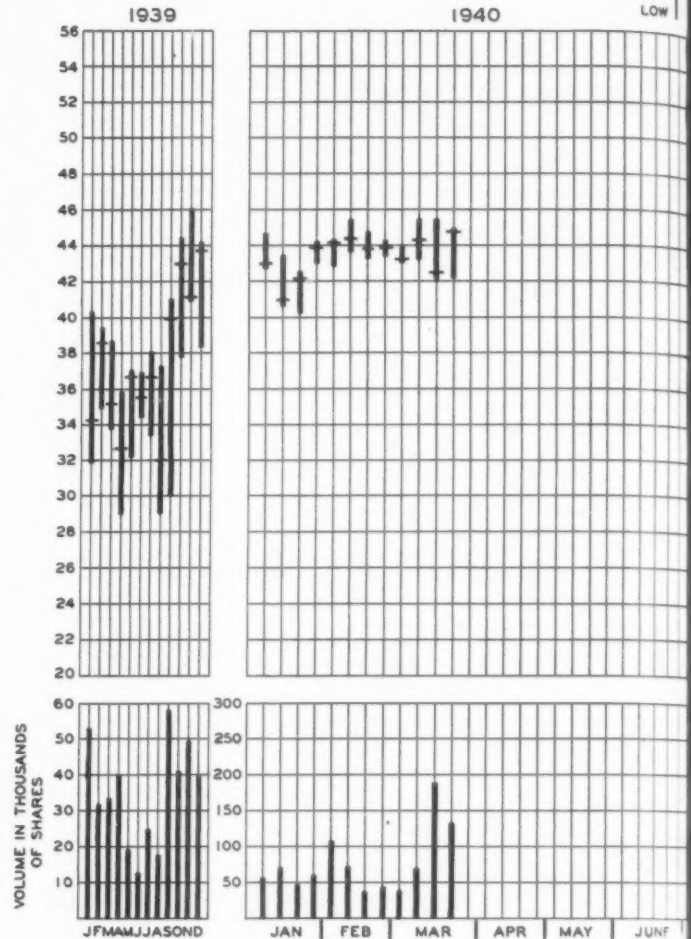
had a sensational move, and profit-taking seems, not the bravest, but the most sensible thing to do at this stage. Recently, the manufacturing companies' equities have failed to keep pace with the air-line stocks and switching might be profitable.

Turning now to a study of the chart on the averages of the aviation manufacturing companies, it is wise to note that during the period when peace talk seemed to dominate the thought in this country, the averages dipped to 42.09 during the week of Mar. 16, and the following week another test-out occurred, with the averages reaching a low of 42.13. Note even though the difference is small, the second reaction did not equal or go below the first reaction point. This is significant, and much importance could be attached to it if it were not for the fact that the highs of 45.37 established during the last two weeks seemed an obstacle too difficult to surmount. It is logical to feel that this maneuver served only to increase the foundation for a future move.

There is nothing strange in one group of stocks failing to move up while other groups seek higher levels. The aviation stocks have flirted with the top of the range while the rest of the market went into lower grounds. Failure of the aviation stocks to go higher now may mean that they are resting while the general market is catching up with the aviation pace-making advance.

The phenomenon is not new, and technical students recognize the maneuver as an expression of the investor seeking securities selling "out-of-line." But the action of the aviation stocks suggest strongly that the real flare-up is not far away. A break through at 46 on sizeable volume cannot be ignored. The move should carry to 51 with a prospect of 54. At that point the action of the group will tell a better story of what lies ahead.

WEEKLY AVIATION AVERAGES



Airline Personnel

Two former stewards—Red Gragg and Clint Hummer—have joined United's passenger agent staff in Chicago. Gragg formerly was at Newark, Hummer at Cheyenne.

New master mechanic at Kansas City, Mo., for TWA is A. T. Stubbs, who was promoted from lead mechanic recently.

W. W. McCormick, who accompanied Adm. Richard E. Byrd as autogiro pilot on his second expedition to Little America, is now enrolled in American's pilot training school at LaGuardia Field, New York, preparing himself to become a first officer.

Clarence E. Christopherson has taken over the duties of shop superintendent for WAE at Union Air Terminal, Burbank, Cal.

Three Navy flyers and one Army flyer have become new co-pilots for United. From the Navy are W. L. Noffsinger, Charles R. Rushing and J. W. Blickensderfer. From the Army is R. A. Barksdale.

Arnold C. Lundberg, George V. Blackmore and John B. Hulburd are new TWA first officers based at Kansas City, Mo.

Changed status from junior agent to agent are the following American employees: Donald Davis, Buffalo; Robert Mahoney, Ft. Worth; Claude McClure, Boston; Joseph Greenough, New York City; Richmond Terry, Boston; Matthew Miller, Buffalo.

New employee of United's reservations department at Chicago is Walter Brandenburg.

New TWA employees at Kansas City, Mo., are Charles E. Meyers, Allan Fleming, Deborah Frye, Norman E. Fisher, K. V. Hake, D. E. Rice, Floyd C. Smith, John N. Borges, William L. Cox, Lewis W. Taylor, Clarence F. Helgeford, Benjamin I. Kelly, M. N. Kohler, Paul T. Houck and Marvin H. Karlson.

The following AA apprentice agents recently were promoted to junior agents: Robert Fay, Boston; Murray Spain, Tucson, Ariz.; Edward Cole Jr. and John Pell, New York City; James Williams and Benjamin Cooley, Washington; Leo Petersen, Chicago; Jack Ward, Nashville, Tenn.; and Robert J. Woods, Abilene, Tex.

"Buzz" Beley recently left United's Chicago operations department for Cheyenne, Wyo. He was replaced by "Larry" Krise.

F. B. McLeod, TWA station manager at Amarillo, Tex., transferred recently to Albuquerque, N. M., and M. B. Joyner, station manager in the New Mexico city, took over duties at Amarillo.

Recently transferred to United's station at Dallas, Tex., were Al Evans from North Platte, Neb., and J. L. Turre from Cheyenne, Wyo.

American has promoted Hugh Boylan from agent to chief reservation agent at Boston. Edward Eidson has been changed from reservations supervisor to general supervisor in New York City. Thomas Mays was changed from supervisor of ticket delivery to reservations salesman at New York.

New United recruit at Salt Lake City is D. Frebairn. George Griffin, formerly of SLC, Rock Springs and Omaha, has returned to UAL's Salt Lake staff.

TWA has employed the following in New York City: C. S. Kessler, G. Kerley, S. J. Kolas, William J. Ahearn and R. F. Weiss.

The following employees of American recently received a change in status: Benjamin Krederavage, Raymond McKittrick, Raymond Brockel, Peter Montana, Francis Riley, Richard Baker, Gustav Maier, John Boddie and Harold Chumbley at New York City; Nicholas Marshall at Louisville, Ky., and David Kneeland at Detroit.

Willie Stone recently left United's Sacramento, Cal., staff to serve the company at Burbank, Cal. His place was taken by Jack Williams from Pendleton, Ore.

A. A. Farrell has been employed by TWA in St. Louis as traffic representative.

Robert Warriner of American recently changed status from station chief operator at Burbank, Cal., to radio engineer at New York.

Additions to United's staff at western division headquarters, Oakland, Cal., are Hal Miner, transferred from Salt Lake City, and P. Webb and V. Collins.

A. R. Fundo at Pittsburgh and John P. Freeman at Chicago are new TWA employees.

NEW YORK CURB EXCHANGE

	Week Ended Mar. 30				Week Ended Apr. 6			
	High	Low	Net Change	Sales	High	Low	Net Change	Sales
Aero Supply B	57½	5	+ ¼	2,400	53½	5	....	1,900
Air Associates	12¼	11¼	+ ½	1,700	13	12¼	+ ¾	1,200
Air Investors	3	2½	+ ½	7,100	3½	2¾	+ ¾	4,200
Air Investors cv pf	29½	28	+ 1	200	30½	30	+ 1	400
Air Investors war	7½	7½	+ ¾	9,700	8	7½	+ ½	4,000
Aviation & Transp.	4	3½	— ¾	19,300	4½	3½	+ ¾	33,000
Beech Aircraft	7½	7	— ½	4,600	7½	6½	+ ¾	6,800
Bell Aircraft	31½	25¾	+ 5½	33,700	32	29½	+ 2½	22,800
Bellanca Aircraft	69½	6½	+ ¼	1,800	7	6½	+ ¾	3,800
Breeze Corps	6½	5¾	+ ½	2,600	6	5½	— ½	2,400
Brewster Aero	17½	15½	+ 1½	59,300	17½	16½	+ 1	24,800
Canadian Colonial	9¾	8¾	+ ¾	10,600	9¾	8¾	+ 1½	13,700
Fairchild Aviation	11	9½	+ ¾	2,400	11½	10½	— ¾	3,200
Fairchild Eng. & Air.	6	5	+ ½	34,000	6	5½	+ ½	13,900
Grumman Aircraft Eng.	16½	15½	+ 2	16,500	21½	18½	+ 2½	43,900
Irving Air Chute	18½	17	+ ¾	1,000	16	15½	+ 1½	600
Penn-Central Airlines	6¼	5½	+ ¾	19,500	6½	5½	+ 1½	18,400
Republic Aviation	3½	3½	— ½	20,700	6	6	+ 1½	38,900
Roosevelt Field	4½	4½	+ ½	100	6¼	4½	+ 1¾	2,000
Waco Aircraft	7	6½	+ ½	9,500	7¾	7	+ ¾	9,700
Western Air Express								

NEW YORK STOCK EXCHANGE

	Week Ended Mar. 30				Week Ended Apr. 6			
	High	Low	Net Change	Sales	High	Low	Net Change	Sales
American Airlines	64¾	61	+ ¼	17,200	69¾	62½	+ 6½	26,200
Aviation Corp.	7¼	6½	— ½	39,700	8	6½	+ ¾	95,200
Bendix Aviation	35¼	33¼	+ ½	49,300	35	34¾	+ ¾	32,800
Boeing Airplane	24	21½	+ 1	13,200	27½	22½	+ 3½	60,900
Consolidated Aircraft	28½	26	+ 1½	9,400	30½	27½	+ 2½	24,400
Continental Motors	4½	3¾	— ½	19,600	4½	3¾	— ½	30,500
Curtiss-Wright	10¾	10½	— ¼	100,000	10¾	9¾	+ 1	96,100
Douglas Aircraft	29¼	27½	— 1	53,400	28½	27½	— 1	29,100
Eastern Air Lines	38½	37	+ ¾	13,700	41	38½	+ 2½	19,900
Ex-Cell-O	27½	25½	+ 1½	9,000	29	27½	+ 1½	8,600
Lockheed Aircraft	35½	30½	+ 4½	122,800	38¾	34	+ 2½	135,400
Glenn L. Martin	45¾	42½	+ 1½	43,900	46¼	43¼	+ ¾	45,200
Natl. Aviation Corp.	15½	14½	+ ¾	40,900	15½	14½	+ ¾	42,600
N. American Aviation	25½	23½	— ¾	30,600	25½	23½	+ ¾	51,500
Pan American Airways	22½	21	+ ¾	98,800	25½	21½	+ 2½	108,300
Sperry Corp.	43¾	42¼	+ ¾	10,900	46½	42¾	+ 3½	26,500
Thompson Products	35½	33½	+ 1½	6,000	36½	34¾	+ 1½	8,200
TWA	20	18¾	+ ¾	28,400	21½	19½	+ 1½	43,000
United Aircraft	48½	47	+ 1	22,700	50½	47½	+ 2¾	45,700
United Air Lines	21½	19½	+ ¾	100,700	23¾	20¾	+ 1¾	110,200
Wright Aeronautical	126	118½	+ 7½	910	127	119	+ 3	540